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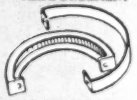
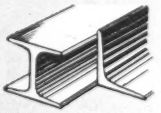


CAISSON RINGS

ANCHOR BOLTS AND THREADED RODS

ROOFING AND SIDING



STRUCTURAL SHAPES

FLOOR AND TRAFFIC PLATES

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ENGINEERING NEWS-RECORD

Volume 122 FEBRUARY 23, 1939 Number 8

NOTEBOOK NEWS

Quick Surveys of Construction Events

▶ The Golden Gate International Exposition entered the spectacle and entertainment stage early this week. How it was built and with what are told in the Oct. 13, 1938 issue of *Engineering News-Record*, which the technically-minded may want to review before going to Treasure Island to see the results of the work.

▶ With the Governor General and Lady Tweedsmuir as honored guests, the Engineering Institute of Canada staged its largest meeting in Ottawa last week. Notable progress was reported in developing closer cooperation between the institute and the provincial professional associations which regulate the practice of engineering in the provinces.

▶ A domestic professional development of the week was the report of activities of the new professional division of the Iowa Engineering Society, established last November to represent the members in collective bargaining and, in general to work for their economic welfare. Membership costs more than in the technical division, but 350 have signed up.

▶ Rhode Island shore towns, sobered by the destructive hurricane, are discouraging rebuilding on the exposed beaches by refusing to issue building permits and by urging state purchase of the shorefront land.

▶ Stream pollution abatement, under federal supervision and with federal aid, is urged in a report by the National Resources Committee, which the President passed to Congress with his blessing.

Rhode Island to Halt Shore Rebuilding

Efforts to prevent land owners from rebuilding houses and cottages along the exposed Rhode Island ocean front, which was swept by the hurricane of last September, are being made by Rhode Island towns and by the State Planning Board. Ocean front towns

(Continued on page 7)

DANIEL W. MEAD RECEIVES WASHINGTON AWARD

THE FOUR founder societies and the Western Society of Engineers at a joint meeting in Chicago, Feb. 20, presented the Washington Award to Daniel W. Mead, consulting engineer and professor emeritus of hydraulic and sanitary engineering at the University of Wisconsin. Mead, a past president of the American Society of Civil Engineers, received the award "in recognition of preeminent service in advancing human progress," and "for his superior contribution to sound theory, good practice, and to high ethical standards.

President Urges Pollution Control

National Resources Committee says $2,000,000 must be spent in next ten years to clear up pollution

Transmitting to Congress a report on stream pollution of the National Resources Committee, President Roosevelt urged, Feb. 16, that Congress again devote its attention to solution of the pollution problem. Congress last year passed a bill setting up a bureau of water pollution control in the U. S. Public Health Service and established a system of federal loans and grants for pollution-abatement, but the President vetoed that bill, because, he said, the bill did not provide for any executive review of the projects.

"Pending further experimentation with interstate and state enforcement activities," the president held, "federal participation in pollution abatement should take the general form of establishing a central technical agency . . .

(Continued on page 7)

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Three WPA Officials Rescued from Sewer

Caught in a suddenly-flooded sewer which they had been inspecting in Brooklyn, N. Y., Feb. 15, three WPA officials clung to an emergency line for two hours before they were rescued.

The three, a superintendent, assistant superintendent, and foreman, had descended into the 12 x 12-ft. sewer to inspect brick retaining walls and new shoring installed to shut off some tributaries during a WPA cleaning job. Following a sudden downpour the water level rose from two to eight feet in two minutes, trapping the trio. A fireman effected the rescue by swimming to them with life lines.

ENGINEERING NEWS-RECORD—Published every Thursday by McGraw-Hill Publishing Company, Inc. Publication Office, 99-129 North Broadway, Albany, N. Y. Editorial and Executive Offices, 330 W. 42nd Street, New York, N. Y., James H. McGraw, Jr., President; Howard Ehrlich, Executive Vice-President; James H. McGraw, Honorary Chairman; Mason Britton, Vice-Chairman; B. R. Putnam, Treasurer; D. C. McGraw, Secretary; J. E. Blackburn, Jr., Circulation Manager. Subscription rates in the United States, Canada, Mexico, Central and South American countries, $5 a year; all other countries, $9, or 36 shillings a year. Entered as second-class matter October 29, 1936, at the Post Office at Albany, N. Y., under the Act of March 3, 1879. Printed in U. S. A. Copyright 1939, by McGraw-Hill Publishing Company, Inc. Cable address: McGRAW-HILL, New York. Member A.B.P. Member A.B.C.

Eastern Road Officials Meet in New York City

Multi-lane highways and safety measures studied by Highway Officials of North Atlantic States

Highway officials from the North Atlantic states last week elected James Logan, state highway engineer of New Jersey, to head as president the coming year's work of their eleven-state association. About a thousand state road officials and representatives of the highway industries took part in the three-day meeting in New York City and listened to over a score of speakers on current roadbuilding problems. There was almost no discussion from the floor, but all the sessions were well attended, and attention to the speakers was close.

With two sessions devoted to general roadbuilding subjects there were special sessions on construction, on safety and on maintenance. Delegates to the convention were welcomed by Arthur W. Brandt, commissioner of highways of New York state, who represented Governor Herbert H. Lehman, and Walter D. Binger, who represented Mayor F. H. LaGuardia. Francis J. Whalen, of the Connecticut state highway department, president of the association, was chairman.

R. H. Baldock, chief engineer of the Oregon state highway department, described highway conditions in Central and South America. Charles M. Upham, director of the American Road Builders Association, discussing "Germany's Streamlined Highways," said that Germany has nothing in design that the United States does not have but emphasized that the German engineers had developed foresight in express-road planning much sooner.

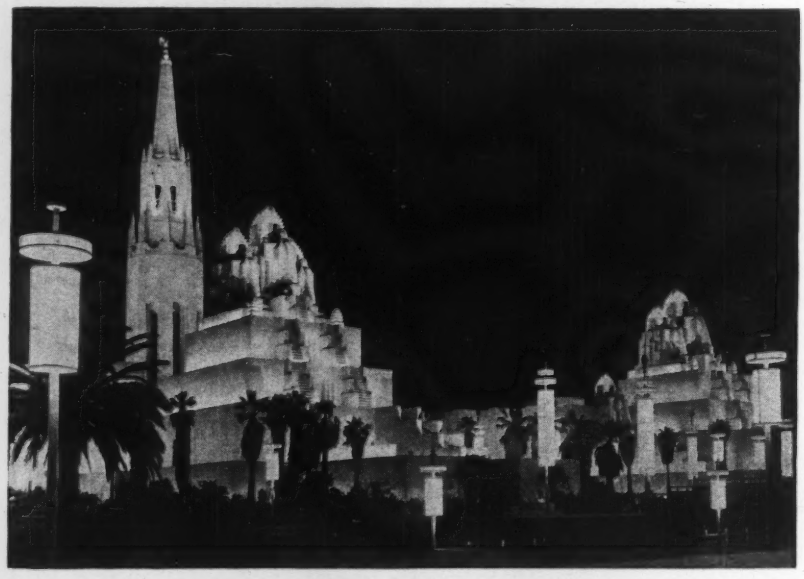
E. Donald Sterner, state highway commissioner of New Jersey, outlined the details of the projected Perth Amboy-New York multi-lane super-highway. It would have, he said, twelve 12-ft. lanes that could accommodate as many as 250,000 cars a day with complete safety. The highway, he estimated, would cost $30,000,000 and would require two years to construct. It would serve the Holland and Lincoln tubes and the George Washington Bridge. Six of the lanes would be reserved for high-speed traffic and the other six for low-speed vehicles.

Opening the session on safety William J. Simon, consultant, Greater New York Safety Council, stressed driver habits and wants as the fundamentals in designing for safety. A census of some hundreds of drivers, he said, had shown their wants to be mobility and simplicity. They wanted to be able to travel at steady speed without stops, slow downs and accelerations and they wanted simple direction and control devices. Engineering design that met these wants, said Mr. Simon, would approach safe design.

Three following papers on safety discussed skid resistant surfaces. Geo. E. Martin, The Barrett Co., described non-skid construction for tar surfaces. In commenting on skidding accident statistics Bernard E. Gray, chief engineer, The Asphalt Institute, warned against assuming that all were due to poor skid resistance on the surface. When traced down many skidding accidents were found to be due to a spot of thin ice or a slick mud coat on a surface that normally had good skid resistance. Speaking of concrete pavements, A. A. Anderson, Portland Cement Association, referred to a common misinterpretation of comparative skid resistance figures given by recent laboratory and field tests. These figures, he stated, had been presented definitely as true only of the particular surfaces and of the particular test conditions and to apply them to any type of surface in general was misleading.

Papers describing methods and equipment for snow and ice removal and sanding icy roads were read by LeRoy F. Johnson, New Hampshire highway department, and R. B. Traver, superintendent of highways, Onondaga County, New York. Details of the recent plant mix process used in Virginia for resurfacing earth roads were given by John J. Forrer, maintenance engineer.

A paper on Connecticut bridge design for flood conditions by Leslie G. Sumner, engineer of bridges, showed views of flood damaged bridges and the replacement structures now being built. Trends in modern highway design, particularly with reference to line, profile and cross-section, were discussed by James S. Bixby, New York highway department and S. W. Marshall, chief engineer, Pennsylvania Turnpike Commission, outlined the general engineering features of the new express highway from Harrisburg to Pittsburgh.



WEST COAST EXPOSITION OPENED

Color in the decorative treatment of large structures both by day and at night has been used extensively at the San Francisco Exposition which opened Feb. 18. By night, luminous plaster outlines the buildings as features of central interest are illuminated by floodlights of a new design, while lesser features are emphasized by warm color tints. Illustrated above are the two massive Elephant Towers flanking the Portals of the Pacific at the main western entrance. Above the 130-ft. Elephant Towers rises the 400-ft. Tower of the Sun. Cylindrical lanterns in the foreground are spaced 60 ft. apart.

Structural work on the fair buildings was finished by the opening date and most of the larger exhibits were ready, but it is expected to be the middle of May before all exhibits and concessions are complete.

WASHINGTON HIGHLIGHTS

Special reports by Paul Wooton

TVA WOULD BE AUTHORIZED to reimburse counties and cities for taxes lost through the purchase by the authority of the Tennessee Electric Power Co. under the terms of a bill introduced by Representative Whelchel, Feb. 14.

REPAYMENT LEGISLATION, covering payment to the reclamation fund by land holders on reclamation projects, is being drafted by the Bureau of Reclamation in general accordance with the recommendations of the repayment commission which was established last year. It is understood that the bill will provide for a decrease or increase in the annual installments due in accordance with the percentage that the year's crop return varies from a set normal. This plan will be offered as an alternative to the fixed payment plan, to be chosen at the option of the reclamation districts.

HEARINGS on the proposed Florida ship canal project will be started March 15 by the Senate committee on commerce. The first few days will be used by Florida spokesmen, after which the committee "will go into the engineering features of the project."

THE INVESTIGATION by Army Engineers of the Passamaquoddy Bay tidal power project in Maine, which was voted by the senate two weeks ago, has been favorably reported by the House Rivers and Harbors Committee.

THE FLORIDA ship canal and the Passamaquoddy project are generally opposed by citizens who have any opinion on them, a recent Gallup poll indicated. Although only about half the voters have a definite opinion on either project, of those who do 75 per cent opposed the Florida canal and 73 per cent opposed Passamaquoddy.

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New Orleans to Study Hospital Foundation

Consultants are to be employed to investigate foundation conditions beneath the recently completed 20-story charity hospital in New Orleans, the hospital administrators have announced. The action was taken on the suggestion of assistant PWA Administrator Howard A. Gray. Gray's request that consultants be employed was made after a report had become current that settlement amounting to as much as 9 in. had occurred in the structure.

The building was described as structurally sound in a statement made last week by the firm of Weiss, Dreyfus & Seiferth, architects on the building. "The only results of an adverse nature," the statement said, are "superficial damage to the interior and exterior finish."

Austin

Praeger to Teach At Rensselaer

A consulting engineer without previous academic connections will take over the leadership of the department of civil engineering at Rensselaer Polytechnic Institute it was announced last week. E. H. Praeger, chief engineer of Madigan-Hyland, will take the post at the end of the academic year when Prof. Thomas R. Lawson retires after 40 years on the RPI faculty. Praeger graduated from Rensselaer in 1915.

Madigan-Hyland, Praeger's firm, has been consultant for New York City on a group of major parkway projects which include the West Side improvement, the Henry Hudson Parkway, the Marine Parkway, the Bronx-Whitestone Parkway, the Circumferential Parkway, and the New York World's Fair site improvement. Praeger was consulting structural engineer on the development of Jones Beach and other Long Island state parks and in the construction of a number of New York World's Fair buildings. He has been structural engineer on a number of important buildings throughout the country, of which the best known is probably the Nebraska state capitol, and has also served as consulting engineer for various federal departments.

Praeger will continue his consulting practice.

Unified Control Urged Over Fuel and Power

National Resources Committee would correlate management of oil, gas, coal, and water power

A unified program for control and conservation of the water power and fuel resources of the nation was urged by President Roosevelt Feb. 16 in a message transmitting a report of the National Resources Committee. "It is time now," the President said, "to recognize that each of our natural sources of energy affects the others."

"Some federal regulations affecting the energy resources will expire at the end of this fiscal year, other regulations at the end of a few more years."

The National Resources Committee report emphasized that the major steps necessary in the conservation of energy resources were to place a major share of the energy burden on lower grade fuels and water power and to promote greater efficiency in the recovery of fuel resources and greater economy in their use.

With respect to water power the committee emphasized the desirability of a policy of multiple-purpose stream development designed in terms of plans for whole drainage basins or major sub-basins. In any basin, design of the power system should allow for interconnections within the basin and with adjacent basins and in general should allow for enventual merging of private plants into the interconnection system.

The committee proposes that a federal agency be set up to regulate the oil and gas industry and that permanent regulation of the coal industry after the Bituminous Coal Act of 1937 expires in 1941 should be studied.

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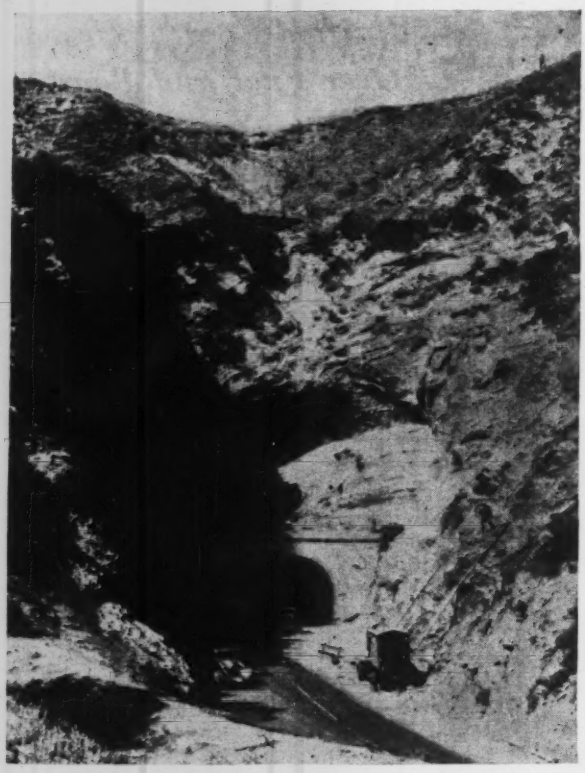
Engineers' Fees Questioned In Georgia Legislature

Questioning the justification for fees which the firm of Robert & Co., Atlanta, are to receive from the Georgia state department of public welfare for engineering and architectural services rendered in connection with the department's $5,000,000 building program, Representative D. Allen of Albany, Ga., has demanded that the contract be cancelled. Representative Allen charged that the fee includes promotional work done by L. R. Robert, head of the firm and former Assistant Secretary of the Treasury, in Washington to obtain federal funds.

Robert has denied the charge and has filed a damage suit against Representative Allen.



Cut For a Tunnel Increases Capacity Of California Road

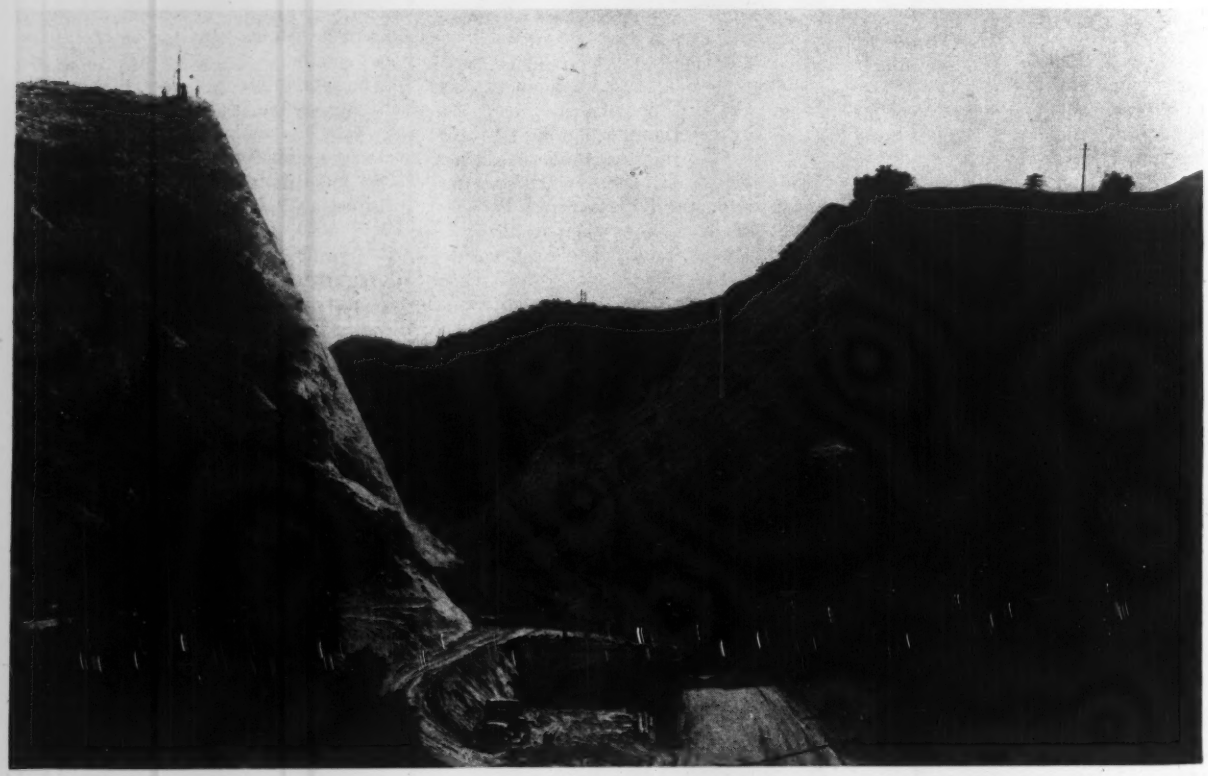
MORE THAN ADEQUATE for traffic of the horse-drawn carriage and the occasional gas-buggy of almost 3 decades ago, Newhall Tunnel (left) has long been a bottleneck for holiday traffic north of California's San Fernando Valley (Los Angeles County). Built in 1910 to replace the old Fremont Pass Road, it has a width of 17 ft. 5 in. In recent years, busy-day traffic has reached 20,000 cars in 9 hours, with a maximum hourly rate of 3,000. Under such conditions traffic was at a standstill for a mile on each side of the portals.

As can be seen below, the tunnel still exists, but in a rather useless condition. An open cut has been substituted, and through it passes a 4-lane highway, complete with a 4-ft. center parting strip.

The cut contract, including approach roads, was for $410,000 and involved some 550,000 cu. yd. of excavation of which 300,000 was in the tunnel cut. Eliminating the tunnel is the major step in a relocation plan which reduces through-route distance by 5.4 mi. as the result of a 3.73-mi. short cut.

BOTTLENECK between Southern California's San Fernando Valley and northern points was a 17½-ft. vehicular tunnel near Newhall. Built in 1910, it was never meant to handle present-day holiday traffic of up to 3,000 cars per hour.

SOLUTION of this congestion problem was the cut shown below. The tunnel has been left in place and a 4-lane divided road now runs over it. This elimination is part of a shortening program which saves the motorist 5.4 mi.—enough to save the cost of the job in operating costs in four years.



New Jersey Approach To Lincoln Tunnel Nears Completion

A LITTLE OVER A YEAR AGO, when the Lincoln Tunnel first connected midtown New York with the New Jersey bank of the Hudson River, motorists leaving Manhattan had to pick their way through the side streets of Weehawken and Union City in order to reach any of New Jersey's arterial routes.

Since then work has been progressing steadily on a depressed roadway across the Palisades to connect the tunnel with State Routes 1 and 3.

The map shows the location of Lincoln Tunnel, the loop which lifts traffic to the top of the Palisades, the depressed roadway across the rock ridge that parallels the river, and the viaduct on which the approach descends to the low, flat land of North Bergen.

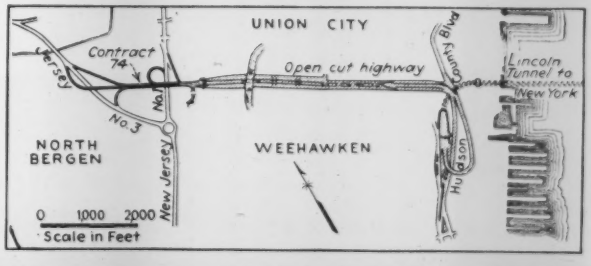
Last links in this Port of New York Authority project are contracts 74, 75 and 76, including the viaduct, its roadway, and paving on connections to existing roads. These are scheduled for completion by May 1, and the whole project should be open to traffic early in the summer.

At right, above, are shown rigid frame bents supporting the combination continuous rigid frame and simple-beam spans of the 1,200 ft. viaduct. Each roadway, independently supported, will carry three lanes of traffic and two sidewalks. The curving connection to Route 1 will carry two lanes and two walks. American Bridge Co. is doing this work.

Photo by R. A. Wurge

RIGID FRAME LEGS carry the Lincoln Tunnel approach from flat meadowland to the open cut across the Palisades.

SPEEDY ACCESS to the Lincoln Tunnel between New Jersey and Midtown New York City will be available when this approach road is opened early this summer. Below is shown a street grade separation and access ramp to the project's open cut section through high, rocky Union City. Simple overcrossings, without connection to the depressed way, are built at other cross-streets. Shaded and black portions of the map at right show the extent of the New Jersey approach to the tunnel.



Port of New York Authority Photo

Engineering Institute of Canada Considers Economic Questions

Sessions of the 53rd annual meeting given over largely to national questions and to professional matters

The engineer's place in a changing world and means for developing closer relations between Canadian and American engineering groups were the major subjects of discussion at the 53rd annual meeting of the Engineering Institute of Canada, held in Ottawa, Feb. 14-15. The meeting was well attended with 650 at the major event, the annual dinner which was honored by the presence of the Governor-General and Lady Tweedsmuir. Other guests were the presidents and secretaries of three of the four Founder Societies and the chairman of the Engineers Council for Professional Development.

Willard Chevalier, vice-president of the McGraw-Hill Publishing Co. was guest speaker at the dinner. Taking as his subject "The Engineer Faces a Changing World," Chevalier called for better correlation of the specialized functions of engineers and stated that rather than calling a moratorium on inventions, as many have urged, there should be a revamping of our capital structure to permit the early replacement of outmoded equipment.

Engineering problems

The visiting officers from the American engineering societies took part in the business session of the institute, at which time Donald H. Sawyer, urged engineers to face the problems raised by technological unemployment and J. C. Parker made a plea for a broadening of engineering vision so that it passes beyond international boundaries. Along this line, it was stated by J. P. H. Perry, chairman of E. C. P. D., that he and J. B. Challies, president of institute, were discussing means for close cooperation between the Canadian and American groups who are interested in advancing the development of the profession.

At the opening luncheon, R. C. Wallace, principal of Queen's University, in speaking on "The Practical Side of Life", made an eloquent plea for a broadening of engineering education. He stated that developments in the material world can not be considered without relation to the spiritual side of life, citing examples from modern engineering achievement, and concluding that the engineer above all men should attempt to look beyond the immediate results of his work. Chevalier, in his address, echoed Wallace's words, to some degree, and developed the thought still further.

Drought amelioration

The two technical sessions of the meeting reflected the trend of engineering thought to broad national matters for they were given over to papers concerned largely with some of the implications of engineering work. The first sessions was devoted entirely to papers presenting different aspects of the drought problem in western Canada and its amelioration. The problem is indicated by the fact that the area involved amounts to 100 million acres in the three prairie provinces, but mainly in Saskatchewan in which province one half of the rural population are on relief. At least one half of the area concerned can not be irrigated because of the lack of available water.

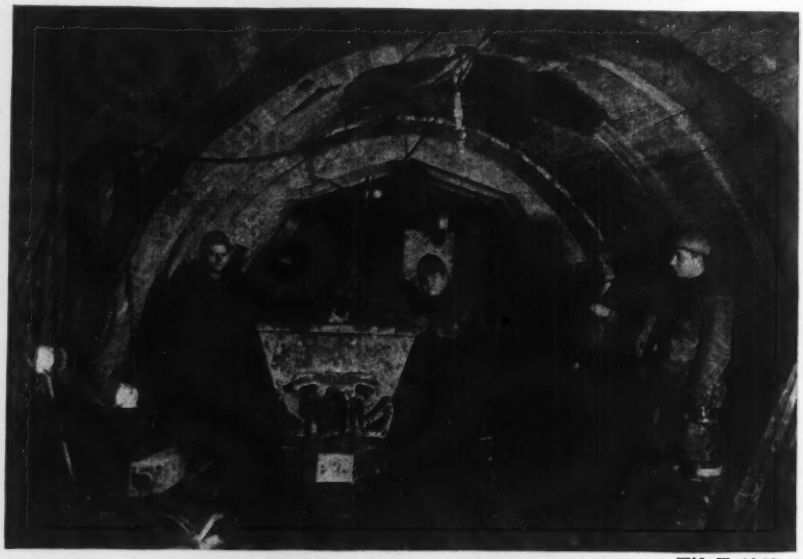
At a luncheon meeting held between the technical sessions, J. G. Gardiner, Minister of Agriculture, suggested that much of the trouble in land wastage now being faced in western Canada could be attributed to the fact that all early settlement had followed the rectangular system of land division laid down by the early land surveyors, instead of the natural system of settlement in relation to streams and valley locations. Since the Prairie Farm Rehabilitation Act of the federal government had come into force, 1,424 small individual or community dams, and 34 large dams had been constructed in Saskatchewan alone.

An announcement received with great interest during the meeting was that, by arrangement with the Canadian Broadcasting Corp., a series of twelve Canadian broadcasts on engineering topics would shortly be given, and that, at the request of the C. B. C., the institute would set up an advisory committee on radio matters.

Professional matters

Much of the report of the E. I. C. council dealt with the development of cooperative measures with the provincial professional associations which resulted in a cooperative agreement being put into effect in Saskatchewan during the year. Under a new by-law submitted to the meeting and approved for balloting, the prosecution of further agreements between the institute and provincial associations will be facilitated by a provision that each association which does make such an agreement will be known as a "component association" of the institute.

During the past year, a special committee on membership and manage-



Wide World Photo

MATERIAL MOVES IN CHICAGO'S SUBWAY

A CARLOAD of the wet clay that underlies Chicago is here being moved through the adit tunnel which will connect an existing 26-ft. working shaft with the subway tunnel proper under State Street. This tunnel, 15 ft. wide and 12 ft. high, is lined with concrete for 87 ft. at which point a temporary air lock 20 ft. long is now being constructed. Farther in toward State Street is to be a 74-ft. permanent lock. Tunnel work will be done under a pressure of from 4 to 10 lbs. Herlihy Mid-Continent Construction Co. is contractor.

ment was at work on plans for needed developments in the organization of the institute. As a result it was announced at the meeting that the council intends to proceed with the introduction of the necessary by-law amendments for the amalgamation of the existing two classes of corporate member of the institute (member and associate member) into one class of member. At some future date, but not immediately, a new grade, probably that of fellow, will be established. This proposal was discussed at the meeting, receiving general approval, and on being put to a vote received unanimous endorsement. The necessary by-law changes can not be introduced before next year, but the president announced that this would be done as promptly as was possible.

New president elected

Harold Wilson McKiel was elected president of the institute. A native of Gananoque, Ont., Mr. McKiel graduated from Queen's University, and after some time spent in research work joined the staff of Mount Allison University, New Brunswick, in 1913, as professor of mechanical engineering. He became dean of the faculty of applied science in 1934, and the faculty of science in 1937.

Owing to lack of time, J. B. Challies, retiring president, did not read his address but stated that it would be printed in the *Journal* of the institute in due course. It is understood that it deals in part with the problems of the young engineer and engineering education, and includes a tribute to the many engineers who now occupy positions in the public service of Canada, their work and its importance being contrasted with the position at the opening of the century.

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Halt Shore Rebuilding

(Continued from page 1)

have set up the South Shore Council to rehabilitate the shore property, and the towns are refusing to grant building permits in order to prevent a recurrence of the September disaster.

The town of Westerly has pushed plans farther than most of the other communities and intends either to purchase or induce the state to purchase the shore property and to re-platt higher ground back from the ocean, laying out roads and correcting errors previously made by land promoters. A strip of land, according to this plan, would be reserved about a half mile from the ocean and parallel to it on which people would be encouraged to build.

The Rhode Island State Planning Board is also developing a plan of rehabilitation, including provisions to prevent rebuilding of habitations along the shore line. If the state decides to purchase shore land, it will be necessary for citizens to vote on a bond issue.

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Plan to Aid Highways Inaugurated in Panama

A novel plan to aid Panama's highway development program was recently sponsored in that country by the Central Bank of Panama, according to a report to the U. S. Department of Commerce. An account, known as the "Sack of Cement," has been opened in the bank, and Panamanians and resident foreigners have been requested to contribute the sum of $0.65, the cost of one sack of cement. The funds collected will be used exclusively for the purchase of cement to pave the longitudinal highway between Panama City and David, it was stated.

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Urge Pollution Control

(Continued from page 1)

It should be supplemented by a system of federal grants and loans, organized with due regard for . . . control of water resources, and for a balanced federal program for public works of all types. The time is overdue for the federal government to take vigorous leadership along these lines."

The National Resources Committee report recommends that some federal agency, presumably the U. S. Public Health Service, be authorized to study water pollution and to stimulate state and private studies, as well as to study the administrative procedures used by local agencies responsible for pollution abatement. Federal assistance to pollution abatement, it is recommended, should be given in the form of grants and loans to public bodies and loans to industry.

Pointing out that complete treatment of all wastes is not attainable, the report estimates that in order to bring about a reasonable abatement of water pollution it would be necessary, over the next ten or twenty years, to treat municipal sewage at a capital cost of about $1,000,000,000 and industrial wastes, in those instances where practical processes are known, at a capital cost of not more than $900,000,000.

Annual expenditures of at least $15,000,000 would be required to operate and maintain the new sewage treatment plants which are needed. The additional annual cost of treating mining and industrial waste is not known accurately, but operating charges would probably exceed $225,000,000.

Professional Division Formed in Iowa

Iowa Engineering Society hears report on group for economic activity at Des Moines meeting

Activities of the newly organized professional division of the Iowa Engineering Society were outlined by H. O. Croft at the Des Moines meeting Feb. 15-16 of the Iowa Engineering Society. Formed as an adjunct to the technical division, the new organization enrolls members at a higher fee than that paid by the regular technical members and has as its principal objective attention to the economic welfare of the engineers of the state. It was organized in an attempt to offset establishment of unions among engineers, particularly in the highway field, and is intended as an alternative agency to speak for the engineering profession in collective bargaining.

The new division was established last November by a vote of the society after preliminary meetings had resulted in 350 signatures to pledge cards. A manager-director appointed in December held 28 meetings, took a census of engineers in the state and of salaries of highway engineers in various Middle Western States, and obtained elaborate professional experience information from about a third of the division membership. At present, Croft said, activities of the division are at a standstill because the director has resigned and a new man has not yet been appointed.

Municipal movies

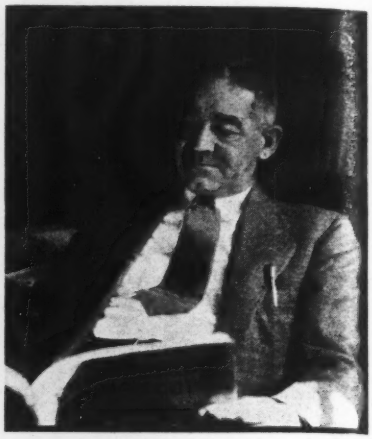
The use of moving pictures in explaining the work of the city engineering department at Fort Dodge to various citizen organizations was described by John L. Parsons, city engineer there. He said that a 50 per cent reduction in complaints and increased cooperation had been obtained. Movies produced with a $150 outfit have been far more effective than lantern slides and stills. Pictures taken included street department shops and equipment, trucks, snow removal, sand and calcium chloride spreaders, grading and graveling of unimproved streets, curb grading by jacks, and weed cutting.

M. S. Hoover received the John Dunlap memorial award for the best paper presented in 1938—one on highway lighting. The Anson Marston award for outstanding services went to George J. Keller, state WPA Administrator.

H. O. Croft was elected president for the coming year and John S. Dodds was reelected secretary-treasurer.

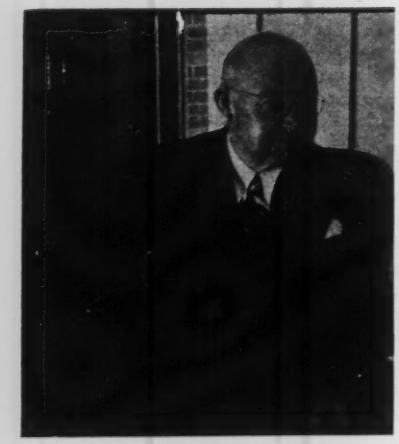
Herman W. Rabe has one of the country's tough assignments. As newly appointed traffic engineer for Springfield, Ill., he is initiating a campaign that purposes to cut drastically his city's traffic death rate—highest in all American cities in its population group. During 1938 there were 22 deaths from automobile accidents in Springfield, a city of 72,000.

Inspecting their handiwork on the new Fitchburg, Mass., plant of Simonds Saw & Steel Co., pioneer windowless wall factory built in 1931 but only now going into service, are **J. K. Gannett,** vice-president, and **N. R. Crater,** superintendent, The Austin Co. Twenty-year men with this national industrial building organization, both agree that this is one of their most interesting jobs.



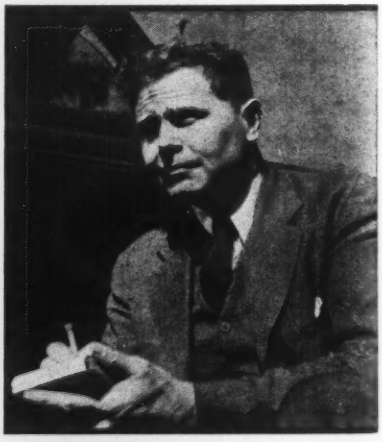
Charles S. Nichols, director of public service and city engineer of Miami, takes time out to read what other cities are doing. Formerly professor of civil engineering at Iowa State he is now busy in providing the "magic city" with the essential works and services necessary for maintaining Miami's distinction as the fastest growing municipality of the country.

MEN AT WORK



W. H. Kirkbride, chief engineer, Southern Pacific Co., directs engineering, construction and maintenance of track, structures, signals, etc. on 14,069 mi. of railroad. (El Paso, Texas, to Portland, Ore., and to Salt Lake City, Utah.) He knows something about railroad work because he has done it ever since he graduated from Stanford in '95 (Herbert Hoover's class).

Edward F. Rankin has served Newark, N. J., for half a century in municipal engineering work; at present he is division engineer in charge of sewers. Here he is getting some new ideas on an inspection trip of the American Public Works Association which recently elected him an honorary member. He has been a member of A.P.W.A. for 35 years and is a past president.



Don Wallace, district engineer of the U. S. Geological Survey in Ocala, Fla., is making a comprehensive study of surface streams and runoff in the state. Stream gaging is a relatively new activity in this region and Wallace is now making observations at 51 stations. Born in India, and educated at Yale, he has become a confirmed booster for Florida since his transfer there in 1930.

MEETINGS

National Societies

THE ASPHALT INSTITUTE, twelfth national asphalt conference, Biltmore Hotel, Los Angeles, California, Feb. 27–March 3.

AMERICAN CONCRETE INSTITUTE, annual convention, Roosevelt Hotel, New York City, Mar. 1-3.

ASSOCIATED EQUIPMENT DISTRIBUTORS, annual convention, Sir Francis Drake Hotel, San Francisco, Mar. 4-6.

AMERICAN SOCIETY FOR TESTING MATERIALS, committee week and regional meeting, Deshler-Wallick Hotel, Columbus, March 6-10.

ASSOCIATED GENERAL CONTRACTORS OF AMERICA, annual convention, Palace Hotel, San Francisco, Mar. 6-11.

NATIONAL EQUIPMENT DISTRIBUTORS ASSOCIATION, annual convention, San Francisco, Mar. 6-11.

WESTERN ASSOCIATION OF STATE HIGHWAY OFFICIALS, annual convention, San Francisco, Mar. 6-11.

AMERICAN ROAD BUILDERS ASSOCIATION, national exhibit and road show, Civic Auditorium, San Francisco, Mar. 6-11.

INTERNATIONAL ACETYLENE ASSOCIATION, annual convention, Rice Hotel, Houston, Tex., Mar. 8–10.

AMERICAN RAILWAY ENGINEERING ASSOCIATION, annual meeting, Palmer House, Chicago, March 14-16.

NATIONAL RIVERS AND HARBORS CONGRESS, annual convention, Mayflower Hotel, Washington, D. C., Mar. 23-24.

Regional and Local

AMERICAN WATER WORKS ASSOCIATION, section meetings: New York, Sagamore Hotel, Rochester, Mar. 30-31; Kentucky - Tennessee, Peabody Hotel, Memphis, Apr. 10-12; Canadian section, Royal York Hotel, Toronto, Apr. 12–14: Montana, Park Hotel, Great Falls, Apr. 14–15.

LOUISIANA ENGINEERING SOCIETY, annual meeting, jointly with spring meeting of American Society of Mechanical Engineers, St. Charles Hotel, New Orleans, Feb. 23–25.

NEW JERSEY SEWAGE WORKS ASSOCIATION, annual meeting, Stacy-Trent Hotel, Trenton, March 9-10

NEW YORK STATE ASSOCIATION OF HIGHWAY ENGINEERS, annual convention, Poughkeepsie Armory, Poughkeepsie, Mar. 9-11.

ENGINEERING SOCIETY OF WISCONSIN, annual meeting, Pfister Hotel, Milwaukee, Mar. 15-17.

AMERICAN SOCIETY OF CIVIL ENGINEERS, Mid-South Section, spring meeting, State College, Miss., Mar. 17.

CONNECTICUT SOCIETY OF CIVIL ENGINEERS, annual meeting, Strathcona Hall, New Haven, March 21-22.

NEW JERSEY MOSQUITO EXTERMINATION ASSOCIATION, annual meeting, Hadden Hall, Atlantic City, Mar. 22-24.

GREATER NEW YORK SAFETY COUNCIL, annual safety convention, Hotel Pennsylvania, New York, Mar. 27–29.

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License Examinations

LOUISIANA: Personal appearance and application for registration as civil engineers or surveyors Mar. 8, followed by written examination Mar. 9 and 10

IOWA: Examination for professional engineering, March 14–15, and for land surveying March 16 in Des Moines.

C. J. SHERLOCK, JR.

APPOINTED this month as state highway director of Alabama, in which post he will carry out the duties of a previous three-man commission, Sherlock has been with the highway department since 1922. He has held the posts of assistant chief and chief engineer.

MEN AND JOBS

COL. J. A. GRANT, formerly a specialist in the office of the U. S. District Engineer at St. Paul, has been transferred to the office of the Chief of Engineers in Washington where he will be engaged on engineering phases of projects handled by the Corps of Engineers. Colonel Grant is also active in military affairs and commands the 347th Engineer Regiment.

M. L. REID has been appointed project engineer on the $6,500,000 hydroelectric development at High Point, N. C., with offices in Winston-Salem. Since June, 1937, Reid has been project engineer on the Colorado River Authority's power and irrigation project at Austin.

KAARLO W. NASI has been appointed public health engineer for the Territory of Alaska with headquarters in Juneau. Nasi, a graduate of the University of California, was formerly sanitary engineer of Whitman County, Wash.

CHARLES H. FOSDICK, superintendent of highways of Erie county, N. Y., has resigned after 20 years in the Erie County highway department. Fosdick became assistant engineer in the department in 1919 and was made superintendent in 1934. He began his engineering career in 1900 with the state public works department.

ARTHUR J. YAW has been appointed county highway superintendent of Erie County, N. Y., succeeding C. H. Fosdisk. For the past three years Yaw has been deputy superintendent; he has been with the county for eighteen years. Previously he served with the New York State highway department.

HENRY G. SUEHRSTED, former PWA engineer examiner in Chicago, has become a partner in the Stark Construction Co. of Cedar Rapids, Iowa.

CHAUNCEY S. ROBINSON has been appointed assistant chief engineer of the Boston & Maine and the Maine Central railways and the Portland Terminal Co.

THOMAS C. FRAME, who was connected with the Pennsylvania Highway Department until four years ago, has been appointed chief engineer of the department, succeeding Samuel Marshall. Frame graduated from Washington and Jefferson College and spent some years on harbor improvement work. Then after two years with the Pennsylvania R. R., he entered the highway department in 1911 as maintenance superintendent. Eight years later he was made assistant engineer in charge of road construction in western Pennsylvania and from 1922 until 1931 he was district engineer, serving as division engineer for the following four years.

OBITUARY

RALPH G. SHANKLAND, Denver consulting engineer, died there last week at the age of 57. Shankland was a graduate of Rensselaer Polytechnic Institute.

WOLCOTT LECLEAR BEARD, retired civil engineer of New York City, died there Feb. 12 at the age of 72. He was a graduate in civil engineering of Hobart College and had served in the Spanish American and World wars.

MATTHEW CUMMINGS, Boston contractor who built the Old Harbor Village housing project, died in Dorchester, Mass., Feb. 9, aged 78. He entered the contracting business at the age of 63 after an extended career in the iron working field. He was at one time superintendent of public buildings in Boston.

PHILLIP H. DESAUTIS, Cleveland general contractor and builder died there Feb. 5 at the age of 52.

WILLIAM H. MULLIGAN, an engineer for the Ontario Hydro-Electric Power Commission died in Toronto, Feb. 6 at the age of 54. A graduate of McGill University, Mulligan joined the Hydro staff in 1917. At the time of his death he was chairman of the engineering committee of the National Safety Council.

JOHN B. MOONEY, 49, a general contractor who had built several sewage and drainage systems and done paving work for the city of New Orleans, died there Feb. 5.

W. F. RODGERS, a former Little Rock, Ark., contractor and recently in the contracting supply business, died in Little Rock Feb. 5.

JOHN J. CLAHAME, 73, retired Columbus building contractor, died in Miami, Fla., Feb. 10.

ELMER E. SMITH, superintendent for the past ten years of the Elgin, Ill. sanitary district, died Feb. 8 at the age of 34.

FRANCES D. H. LAWLOR, for many years superintendent of the Citizens Water Company at Burlington, Iowa, died Feb. 25.

CHARLES L. WHITING, superintendent of the Chicago terminal division of the Milwaukee R.R. died in Hot Springs, Ark., Feb. 13, at the age of 65. Whiting became road master of the Milwaukee in 1907 on construction of the road's western lines. He was superintendent of construction until 1914, later division superintendent at Milwaukee, and in 1923 he became superintendent at Chicago. During the war he served in France with the 13th Engineers.

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Riedel Chief Engineer Of N.Y.C. Board

John C. Riedel, deputy chief engineer of the New York City Board of Estimate, the major administrative agency of the city, has been appointed chief engineer of the board to succeed Vernon S. Moon, who will retire on March 1. Riedel began his service with the city in 1901 as a rodman in the bureau of sewers in Brooklyn. Subsequently he was made an assistant engineer and later engineer of design of the bureau. He was appointed deputy chief engineer of the Board of Estimate in 1934. As chief engineer he will sit on the City Planning Commission as a commissioner.

Vernon S. Moon has been with the city for 35 years and with the board of estimate since 1906. He was appointed deputy chief engineer in 1929 and chief engineer in 1934.

CONTRACTS AND CAPITAL

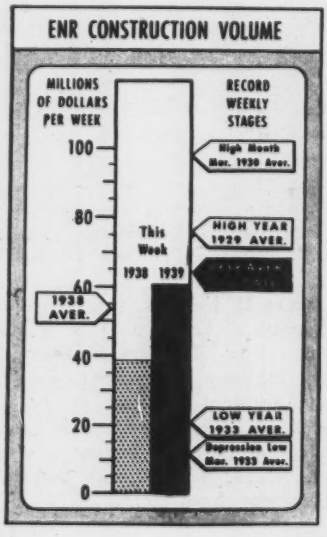
ENGINEERING construction awards for the short week due to the Washington's Birthday holiday total $60,863,000, a 44 per cent gain over the short preceding week, and a 56 per cent gain over the corresponding week in 1938.

The current week's volume brings the 1939 construction total to $515,536,000, a 29 per cent increase over the $399,667,000 reported for the 8-week period in 1938.

Private construction for the week reaches the highest level since April 14, 1938, due to gains in industrial and commercial building. It is 88 per cent above both last week and the 1938 week. Public awards are 22 per cent above a week ago, and 39 per cent above a year ago.

A $7,500,000 contract for a steam generating plant for the Duke Power Company in North Carolina helped to bring the industrial volume to its highest level since October 28, 1937. In addition to industrial buildings, the sewerage, bridge, commercial building and large-scale housing, public building, highway, and unclassified volumes are above last week. All construction groups except highways and earthwork and drainage report increases over the 1938 week.

New capital for construction purposes for the week, $291,369,000, is made up of $273,500,000 in federal funds for WPA construction, $10,000,000 in corporate securities, $7,824,000 in state and municipal bonds, and $45,000 in RFC loans for public construction.



CONTRACTS

(Thousands of dollars)

	Week Ending Feb. 24 1938	Feb. 16 1939	Feb. 23 1939
Federal	$2,437	$5,635	$4,345
State & Municipal	22,849	23,205	30,957
Total public...	$25,286	$28,840	$35,302
Total private..	13,555	13,570	25,561
TOTALS	$38,841	$42,410	$60,863
Cumulative 1939 .....(8 weeks).....			$515,536
1938 .....(8 weeks).....			$399,667

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1938 8 Wk.	1939 8 Wk.
NON-FEDERAL	$129,856	$152,924
Corporate securities	61,230	29,737
State & Mun. bonds	69,014	107,511
R.E.A. loans	.....	15,631
R.F.C. loans	2,109	45
PWA allotments...	— 2,497	...
FEDERAL	.....	$273,500
TOTAL CAPITAL.	$129,856	$426,424

FHA MORTGAGES

	Week Ending Feb. 19 1938	Feb. 11 1939	Feb. 18 1939
Selected for appraisal ...	$10,026	$21,710	$20,500*
Cumulative 1939 .....(7 weeks).....			$130,145*
1938 .....(8 weeks).....			$60,694

* Subject to revision.

ENR INDEX NUMBERS

Index Base		1913	1926
Construction Cost	Feb.....	234.31	112.63
Building Cost	Feb.....	196.23	106.08
Volume	Jan.....	287	126

CONSTRUCTION REPORTS

Compiled by BUSINESS NEWS DEPARTMENT
Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, MANAGER
(Daily service also available—Write for details)

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

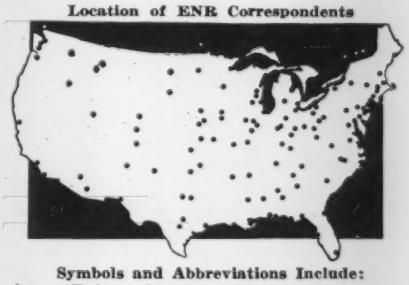
Classes of Construction
(Named in order of Listing)

Water Supply	Unclassified
Sewers, Waste Disposal	Materials, Equipment
Bridges, Grade Cross'gs	Public Buildings
Streets & Roads	Commercial Buildings
Earthwork, Waterways	Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads);
BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR);
LOW BIDDERS ($500,000 projects and over);
CONTRACTS AWARDED

Location of ENR Correspondents



Symbols and Abbreviations Include:

†	Federal Government
★	Project of $500,000 or over
ENR	Engineering News-Record
CD	McGraw-Hill Construction Daily

WATER SUPPLY

PROPOSED WORK

Calif., San Jose—San Jose Water Works, 374 W. Santa Clara St., plans expansion program during 1939, 60,000 to 70,000 lin. ft. mains, new pump, equip. $250,000-$300,000. J. W. Ford, 374 W. Santa Clara St., engr.

Mass., Falmouth—Water Dpt., Town Hall, appropriated $60,131 for maintenance, Water Dept., watermain construction.

N. J., Saddle River—Pump. Sta., with driving wells, etc. for water sys. F. C. Job, 241 Main St., Hackensack, engr.

N. Y., Le Roy—Bd. Trustees Le Roy and Water & Light Comrs., Le Roy, exten. c.i. watermains, 3 mi. from here to Lime Rock. Over $15,000. F. J. O'Maelia, village engr.

N. Y., Napanoch—State Dpt. Correction, State Bldg., Albany, chlorinating plant at State Institution. $15,000. **Maturity later in 1939.** T. F. Farrell, State Bldg., Albany, engr.

O., Western Star—Water distr. sys., probably extend. lines from nearby Wadsworth. $26,753. $10,000 bond election will be held.

Okla., Wynnewood—Preliminary plans, impounding reservoir water supply. $30,000. A. C. McCord, Pauls Valley, engr.

Tex., Eden—WW addns., earth and concrete retaining lake, distr. sys., mains, meters, fire hydrants. $45,000. Freese & Nichols, Capps Bldg., Fort Worth, engrs.

Tex., LaMarque—Galveston Co. Fresh Water Supply Dist. 2, c/o B. Inselman, pres., Galveston, WW, well, pump, chlorinator, pipe, etc. $69,500. H. G. Olmsted, c/o owner, engr.

Tex., League City—WW sys. $35,000. H. G. Olmsted, Houston and c/o owner, engr.

★**Wash., Bellingham**—Water sys. replacements. $600,000. WPA. E. W. Gooch, City Hall, engr.

Wash., Puyallup—Laying 5,000 ft. c.i. watermain, constructing overflow flumes at reservoir, backfill behind reservoir wall, clearing fire breaks on city springs property, constructing fences and clearing around reservoir. $38,993. WPA. C. Phillips, City Hall, engr.

Wis., Granton—Village, WW sys., $23,285. WPA. General Eng. Co., Portage, engrs.

B. C., Trail—Municipality of Trail, constructing deep wells, East Trail. Over $15,000. W. E. B. Montpeny, clk.

N. S., Port Morien—Water supply sys. $25,000.

Ont., Goderich—Utilities Comn., J. B. Kelly, supt., installing chlorinating plant for water supply.

Ont., Queenston—WW sys., 6 mi. watermains, covered reservoir. Over $40,000. **Maturity spring.** C. Gardiner, 268 Morrison St., probable engr.

Que., Drummondville—J. Marier, municipality clk., bids in March, increasing capacity filtration plant from 1½ mgpd to 3½ mgpd. Over $25,000. R. Morrissette, Town Hall, engr. CD 1/11—ENR 1/19.

Sask., Maple Creek—Town Clerk bids soon completing relaying water distr. sys. in west side of town. $18,000. J. Lambert, Maple Creek, engr. CD 7/6.

Sask., Moose Jaw—City Clerk bids soon enlarging and imprv. present pump. equip. at Caron, laying new watermains, repairing existing pipe lines to cope with increased pressure from Caron water sptrage. project. $35,000. A. W. E. Fawkes, Moose Jaw, engr.

BIDS ASKED

Bids Asked February 27

N. Y., Livonia — Water filtration plant, Contr. "B" of sewer and water project. $127,372. PWA. Extended date. Wm. S. Lozier, Inc., 10 Gibbs St., Rochester, engrs. CD 2/8—ENR 2/9.

Bids Asked February 28

Pa., Bethlehem — Bethlehem Municipal Water Auth., 53 E. Broad St., B. L. Nagle, secy., constructing Tunnels 1 and 2, Wild Creek Gravity Water Supply Sys. Contr. 4. PWA. R. L. Fox, 37 E. Broad St., consult. engr.; adv. ENR 2/23.

Bids Asked March 1

★**Conn., New Britain**—Bd. Water Comrs., City Hall, M. W. Bannan, chn., rapid sand filter plant and appurtenant structures. Total est. $550,000. PWA. G. Molleur, City Hall, engr.

Bids Asked March 2

†**New York** — Supt. Lighthouses, Staten Island, N. Y., drilling 1,200 ft. well of 3 in. drop pipe in 6 in. casing; also installing electrically operated pump, motor and wiring, pressure tank, etc.

Bids Asked March 8

Ky., Lawrenceburg — Contr. 2, tank and tower for WW; Contr. 3, plant imprv. $24,200. PWA. J. S. Watkins, McClelland Bldg., Lexington, engr.

Bids Asked March 14

Ky., Owensboro—Contr. 9, water plant rehabilitation, filtration building and power plant; Contr. 10, filter plant equip.; Contr. 11, furnishing and installing meters. $400,000. Black & Veatch, 4706 Bway., Kansas City, Mo., engrs. CD 1/26—ENR 2/2.

CONTRACTS AWARDED

Ala., Birmingham — Birmingham Waterworks Co., c/o H. B. Richards, 2114 N. 1 Ave., 6 rein.-con. filter units, filter house, pump house and chemical building, to Day & Sach, 2400 S. 5 Ave. Bids 2/3. CD 1/26.

Ala., Montgomery—Water meters, to Pittsburgh Equitable Meter Co., 67 E. McCall Pl., Memphis, Tenn., **$6,960.** Est. $5,000. **PWA.** Bids 1/31. CD 1/12—ENR 1/19.

Calif., San Francisco—Public Utilities Comn., City Hall, laying 2 and 8 in. c.i. watermains, College Terrace, 6 and 36 Aves., to San Francisco Water Dpt., 425 Mason St., **$2,196.** City to furnish pipe and fittings. Bids 2/10. CD 2/1.

†**Ga., Fort Benning**—Con. Q. M., water supply sys., to Central Contg. Co., Construction Bldg., Dallas, Tex., **$233,350.** Bids 2/13. CD 1/9.

Ga., Kingsland—WW, to Espy Paving & Constr. Co., 2821 Bull St., Savannah, **$19,890.** Est. $22,290. **PWA.** Bids 2/3. CD 1/16—ENR 1/19.

Ga., Nicholls — General contract WW, to Smith-Pew Constr. Co., 786 W. Peachtree St. N.W., Atlanta, **$21,117.** Est. $20,600. **PWA.** Bids 2/10. CD 2/3.

Ill., Highwood—Elevated steel water tank for WW, to Chicago Bridge & Iron Co., 37 W. Van Buren St., Chicago, **$19,750. PWA.** Awarded 1/28. CD 12/20—ENR 12/22.

Ky., Covington—Contr. 2, raw water pump sta. addns., 2 story, 30x35 ft. pumphouse, also altering present building, to H. W. Miller & Son, Covington, **$55,511;** Contr. 3, pumps and power supply lines, switchgear, etc., to Pomona Pump Co., 206 Commercial St., Pomona, Calif., **$33,700.** Bids 2/14, awarded 2/14. CD 1/27—ENR 2/2.

Mass., Amesbury—Water Dpt., Town Hall, 10 driven wells and appurtenant c.i. piping, **WPA. $22,000.** Weston & Sampson, 14 Beacon St., Boston, engrs.

Mich., Battle Creek—Deep well, to F. R. Dunbar & Sons, Delta, O., **$2,000.** Bids 1/12, CD 1/4; 18 pumps for deep wells at Verona Sta., to W. A. Da Lee Inc., 4825 Woodward Ave., Detroit, **$7,232.** Bids 2/2. CD 1/11. **PWA.**

Mich., Lapeer—WW pump sta. and fdn. for steel tank, to R. Fuhrman, Lapeer, **$8,200.** Part of $19,200 **PWA** project. Bids 11/14. CD 11/4.

Mich., Montrose—J. C. Rogers, village clk., pump equip., etc., for WW, to Duro Pump Co., Bay City, **$2,320;** 50,000 gal. steel tank, to Chicago Bridge & Iron Co., 37 W. Van Buren St., Chicago, Ill., **$5,980.** Bids 1/30. CD 1/24.

Minn., Stephen—J. F. Yetter, village clk., water treatment plant, sewage disposal sys., **WPA. $80,000.** P. C. Bettenburg, 1437 Marshall Ave., St. Paul, engr.

N. J., Matawan—Mayor and Council, imprv. WW pumping sta., **WPA. $20,000.** L. P. Booz, Perth Amboy, engr.

N. Y., Binghamton—Additional watermains in various streets, own forces. Over **$15,000.** J. A. Giles, City Hall, engr.

N. Y., Dunkirk—R. D. Schmatz, city clk., lowering 6,162 lin. ft. c.i. watermains, Lucas Ave., Margay, East Green, Hoyt, Nevins and N. Ermine Sts., own forces under supervision A. G. Walter, city engr. **$15,412.** Owner purchases materials. Work starts at once.

N. C., Morganton—B. Bristol, Sr., mayor, furnishing materials and equip. entering into construction two 750,000 gal. steel stanpipes, etc., to Steel Constr. Co., 720-4 Ave. S., Birmingham, Ala., **$28,980.** Bids 1/30, awarded 2/7. CD 1/20.

N. C., Rocky Mount—Exten. watermains, **WPA. $29,494.** C. F. Chasen, city engr.

Okla., Quinlan—WW sys., **WPA. $10,000.** Bonds voted. CD 12/29—ENR 1/5.

Pa., Pittsburgh—F. M. Roessing, city dir., Contr. 7, piping, appurtenances and connections from Allentown, Lincoln and Squirrel Hill water storage tanks, to Nardulli & Sons Co., 1315 Washington Bldg., **$44,112.** Bids 2/3. CD 2/1.

Pa., Ridley Park—Central Delaware County Auth., 30 Dutton St., general contract Crum Creek Pump Sta., to L. F. Driscoll, 732 Vernon Rd., Mt. Airy, Phila., **$21,747;** Contr. 2, mechanical equip., to Roberts Filter Mfg. Co., Darby, **$23,940.** Bids 12/20. CD 12/6—ENR 12/8.

Tex., Groves—Jefferson Co. Water Control & Supply Dist., Groves, water purification plant **$133,000,** sanitary sewage disposal plant **$93,000,** "Purchase and Hire" plan. **WPA.** M. D. Gates, Port Arthur, engr. CD 11/1.

Tex., Lufkin—Pump. sta., sludge digestor, water distr. sys., to Dellone Constr. Co., Thomas Bldg., Dallas, **$35,897.** CD 12/19.

Tex., Roma—R. Guerra, mayor, WW sys. and treatment plant, force account, **$35,500. WPA.** J. W. Beretta Engineers, Inc., Natl. Bank Commerce Bldg., San Antonio, engr.

Wash., Spokane — A. W. Lindsay, water supt., exten. and reconstructing water sys., mostly 8 and 10 in. c.i. pipe, **WPA. $225,600.**

Wis., Muscoda—Laying pipe lines, valves and hydrants, to Orfei Constr. Co., Melrose Park, Ill., **$25,968.** Bids 2/3. Rejected bids 2/3 elevated tank. CD 1/26.

B. C., Nanaimo—H. Hackwood, city clk., pipe line from dam to reservoir, day labor under supervision A. G. Graham, engr., City Hall. Total est. **$200,000.** 35,700 ft. pipe, to Pressure Pipe Co. of Canada Ltd., 510 W. Hastings St., Vancouver, **$96,501.** CD 1/18, under "Materials & Equipment."

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Ala., Talladega—W. L. Baker, pres. City Comn., imprv. sewerage sys. and sewage treatment plant. $50,000. J. W. Goodwin Eng. Co., 1244 Martin Bldg., Birmingham, engr.

Sewers, etc. (Continued)

★**Conn., Bridgeport**—Awaiting WPA approval for imprvs. to Bostwick Ave. Sewage Treatment Plant, providing chlorine gas treatment of sewage and modernization to handle 17 m.g.d.c. with maximum capacity of 50 m.g.d.c. $700,000. Fuller & McClintock, 11 Park Pl., New York, engrs.

Ill., Galesburg—Galesburg Sanitary Dist. for Pine-Locust St. storm sewer, completion Northeastern storm sewer, dredging Cedar Fork Channel. $212,000. Alvord, Burdick & Howson, 20 N. Wacker Dr., Chicago, engrs.

Ill., Silvis—Sewage disposal plant. $51,000. Consoer, Townsend & Quinlan, 211 W. Wacker Dr., Chicago, engrs.

N. J., Hasbrouck Heights—Boro will not construct sanitary sewer force main and sewage treatment plant imprv. $168,270. Project abandoned and PWA funds withdrawn. T. Bowe, 110 William St., New York, engr. CD 7/1—ENR 7/7.

N. J., West Orange—Town, Town Hall, concrete storm sewers along Traction right-of-way. $55,424. WPA. H. Warnick, Town Hall, town and WPA engr.

N. Y., Greenburgh (P. O. Tarrytown)—Town of Greenburgh, bids soon, additional storm and sanitary sewers. Over $25,000. J. M. Heeney, Greenburgh, engr.

O., Chagrin Falls—G. Foster, village clk., surveys sewage disposal plant and distr. lines. C. W. Courtney, 1770 E. 11th St., Cleveland, engr.

O., Mansfield—1,620 ft. 15- to 36-in. storm sewer, installing 5 inlets and 5 manholes Bentley Ave. from Park Ave. to East Second St. $25,000.

Okla., Blackwell—Made preliminary plans storm sewers, 6 St. $31,000. C. A. Stoldt, Blackwell, engr.

Okla., Shawnee—Probably election March 7 to vote bonds sewage disposal plant. $85,000. C. E. Edge, Shawnee, engr.

Pa., Youngsville—Boro, sanitary and storm sewers, disposal plant. $80,000. PWA. Special election Mar. 28. $30,000 bonds for same. Hill & Hill, 24½ Main St., North East, engrs. CD 7/13—ENR 7/21.

Tex., Eden—New sanitary sewerage sys., collecting sys. and disposal plant. $55,000. Freese & Nichols, Capps Bldg., Fort Worth, engrs.

Tex., League City—Sanitary sewerage sys. and plant. $40,000. H. G. Olmstead, Houston, and c/o owner, engr.

Wis., Milwaukee—Cancelled bids to have been opened Feb. 10, sewers, S. Layton Blvd. and S. 25, W. Grant, S. 27 Sts. CD 2/1.

Wis., Milwaukee—Rejected bids Jan. 20, sewers in S. Brust St. and East Saveland Ave. $236,000. PWA. Will readvertise. J. P. Schwada, city engr. CD 1/17—ENR 1/19.

Wis., Necedah—Village, sanitary sewers. $62,000. WPA. General Eng. Co., Portage, engr.

BIDS ASKED

Bids Asked February 27

N. Y., Livonia—See "Waterworks."

N. Y., New York—President Bronx Boro, Bronx County Bldg., E. 161 St. and Grand Concourse, rock excav in trenches in connection with construction main sanitary sewer City Island Ave.; furnishing, delivering vitr. pipe, with spurs for sewer and upper level sanitary sewers, etc. City Island Ave.

Bids Asked February 28

N. Y., Hudson Falls—Mayor and trustees, at office J. J. Etu, village clk., Village Hall, Contrs. 3, 4, 5 and 6, sewage treatment plant, plumbing, heating and electrical work. $85,000. PWA. Whitman-Requardt & Smith, 11 N. Pearl St., Albany, consult. engrs.; adv. ENR 2/23. CD 1/31—ENR 2/2.

N. Y., Oyster Bay—Town Bd. at office Town Clerk, Town Hall, dredging minimum 75,000 cu. yd. material from Oyster Bay Harbor and filling in of an adjacent meadowland to form beach and parking area.

N. C., Statesville—T. G. Shelton, mayor, Div. 2, sewerage imprvs., constructing 2 m.g.p.d.c. sewage treatment plant. $225,000. PWA. W. C. Olsen, Hargett St., Raleigh, consult. engr.

Wis., Milwaukee—Dpt. P. Wks., sewers, N. 33 St., W. Villard and W. Custer Aves. $190,600. PWA. J. P. Schwada, city engr.

Bids Asked March 1

Wis., Eau Claire—Div. C, sewage treatment plant and booster sta., Div. D pump. equip., Div. E gas engine generating set. $350,000. PWA. Greeley & Hansen, 6 N. Michigan Ave., Chicago, Ill., engrs.

Bids Asked March 2

Mass., Lexington—A. R. Giroux, chn. Bd. Selectmen, Town Office Bldg., force main for sewage pump. sta., equip., etc. Metcalf & Eddy, 1300 Statler Bldg., Boston, engrs; adv. ENR 2/23. CD 2/2—ENR 2/9.

Bids Asked March 6

N. Y., Tonawanda—City Clerk, City Hall, intercepting sewers. $65,000. PWA Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass., engrs.; adv. ENR 2/23.

Bids Asked March 7

★**Ind., Hammond** — Sanitary Dist., J. E. Haney, chn., City Hall, Div. 3, North Interceptor, 12,000 lin. ft. 24 in. pressure line, 12,000 lin. ft. 30 in. rein.-con. sewer. Total est. $3,000,000. PWA. C. Hurd, 1039 Architects & Builders Bldg., Indianapolis, consult. engr.

Ont., Toronto—Chairman Bd. Control, supplying, installing regulating valve, etc., at John St. Pump. Sta. Over $1,000. Private plans.

Bids Asked March 9

Ill., Chicago—Sanitary Dist., Chicago, 910 S. Michigan Ave., J. J. Sullivan, clk., Div. R.R. for Southwest Sewage Treatment Works. R. A. Woodhull, chn. Committee on Finance.

Bids Asked March 21

N. Y., Ossining — Village, Water St., sewage treatment plant. $135,000. J. C. Harding, 11 Park Pl., New York City, and Abel Bldg., Mt. Kisco, consult. engr.

CONTRACTS AWARDED

Calif., Bakersfield—R. J. Veon, clk. Kern Co., constructing 721 lin. ft. 21 in. sanitary sewer, manholes, wier box, recording device, etc., to Stroud-Seabrook, Box 97, **$5,100.** Bids 2/6. CD 1/27.

Calif., Carmel—Carmel Sanitary Dist., Sundial Court Apt. Bldg., sanitary sewers, tee branches, manholes, lampholes, to W. J. Tobin, 3701 Balfour St., Oakland, **$12,658;** sewerage works imprvs. trunkline outfall and intercepting sewers, Scienic Rd. 16 Ave. sewage pump stations, suspension bridge, etc., to F. C. Stolte, 203 Pine St., San Francisco, **$97,484.** Bids 2/3. CD 1/24—ENR 1/26.

Calif., Ontario — Outfall sanitary sewer, various streets north of Dessau St. between Campus Ave. and east city limits, **WPA. $52,-216.** Work starts Mar. 6. C. T. Holmer, City Hall, engr.

Calif., San Mateo—Constructing 2,500 lin. ft. 12 in. vitr. pipe sewer, manholes, etc., to H. E. Casey, Woodside Way and Peninsula Ave., **$2,947.** Bids 2/6. CD 1/25.

Del., Nestover Hills — Sanitary sewers in various streets, **WPA. $81,634.**

Del., Richardson Park—Sanitary sewers in various streets, **WPA. $65,422.**

Ga., East Point — Refuse incinerator, 25 ton daily capacity, to Nye Oderless Incinerator Co., Macon. Est. **$16,300.** Bids 1/30. CD 1/17—ENR 1/19.

Ill., Auburn — Sewage treatment plant, Imhoff tank, trickling filter. Over **$25,000. WPA.** $15,000 bond election Feb. 18, for same.

Ill., Chicago — Sanitary Dist. of Chicago, 910 S. Michigan Ave., centrifugal pumping units, Western Springs pump. sta., to Allis-Chalmers Mfg. Co., 135 S. LaSalle St., **$3,975;** 12 in. c.i. pipe for same, to J. B. Clow & Sons, 201 N. Talman Ave., **$12,997.** Bids 1/5. CD 12/19—ENR 12/22.

Ill., Morrison—Sewage disposal plant, to Stark Constr. Co., 118 11th St., Cedar Rapids, Ia., **$82,765. PWA.** Bids 2/9, awarded 2/10. CD 2/1.

Ind., Auburn—Sewage treatment plant, construction of and complete operating equip. of central control plant, to E. H. Marhoefer, Jr. Co., 222 West North Bank St., Chicago, Ill., **$108,871. PWA.** Bids 2/10, awarded 2/10. Phelps & Peck, Brinkman Bldg., Michigan City, consult. engrs.

Ind., Scottsburg—Sewage treatment plant and sewerage sys., **WPA. $125,000.** Russell B. Moore & Co., Inc., 930 Ind. Pythian Bldg., Indianapolis, consult. engrs. CD 2/1—ENR 2/16.

Ky., Stanford—Sedimentation basin, digestion tank, screen chamber, etc., to Fry Eng. Co., Cynthiana, approx. **$24,000.** Est. $25,000. Bids 2/10. CD 2/3.

Mass., Saugus—Sewer Com., C. E. Flynn, chn., Town Hall, Contr. 2, force main and pump. sta., structure, to John MacDonald Constr. Co., 215 California St., Newton, **$224,-462.** Total est. $428,000. **PWA.** Bids 1/19. CD 1/5—ENR 1/12.

Mich., Detroit—H. E. Beyster, comr. P. Wks., furnishing, installing plant piping sys., in sewage treatment plant, West Jefferson Ave. and Rouge River, to Johnson, Larsen & Co., 6530 Beaubien St., **$162,815. PWA.** Bids 2/6. CD 1/17—ENR 1/19.

Mich., Detroit—H. E. Beyster, comr. P. Wks., yard sewers and water supply lines for sewage treatment plant, West Jefferson Ave. and Rouge River, to R. H. Hidey, 270 St. Aubin Ave., **$74,592. PWA.** Bids 2/2. CD 1/17—ENR 1/19.

Mich., Midland—A. E. Coons, city clk., interceptor sewers, to McDermott & Sons, Grand Rapids, **$17,526. PWA.** Bids 1/24. CD 1/11.

Minn., Minneapolis—Stack, etc., for garbage destructor, 20 Ave. S and E. 19 St., to Rust Eng. Co., 805 Pence Bldg., **$32,170. PWA.** Bids 2/6. CD 1/19—ENR 1/26.

Minn., Stephen—See "Waterworks."

Minn., Tracy—Sewage plant addn., to Leck Constr. Co., 211 S. 11 St., Minneapolis, **$24,-575.** Est. $27,000. **PWA.** Bids 2/6. CD 1/25.

★**Neb., Omaha** — Burt St., storm sewers. **WPA. $1,700,000.**

N. Y., Buffalo—Dpt. P. Wks., C[illegible] Hall, 1,848 lin. ft. rein.-con. storm sewer, [illegible]mwood Ave., **WPA. $50,000** plus.

N. Y., Buffalo—Buffalo Sewer Au[illegible] City Hall, sewage pump. sta. Div. DD, [illegible] Couse & Saunders, 12740 Lyndon Ave., Detroit, Mich., **$82,000. PWA.** Bids 2/9. CD 1/24—ENR 1/26.

N. Y., Lackawanna—Pump. sta. and sewers, to E. P. Harrington, 1708-24 St., Niagara Falls, **$53,960. PWA.** Bids 1/30. CD 1/25.

N. Y., Port Jervis and **Oswego** — Village Port Jervis and city of Oswego, additional sewer work, storm water culvert on site of old D. and H. Canal, Port Jervis, storm sewers, various streets Oswego, **WPA. $25,-000** plus.

N. Y., Rochester—Combined sewer, laterals, etc. various streets, **$50,000** plus; combined sewer Pryor St., storm water sewer, Summit Dr., bituminous macadam paving Summit Dr., over **$50,000. WPA.**

N. Y., St. George — President Richmond Boro, Boro Hall, sanitary sewer, Grant Pl. from Greeley to Midland Aves., etc., to Trifoglio Constr. Co., 10 Van St., Staten Island, **$3,558.** Bids 1/25. CD 1/18.

N. Y., Schenectady—Electrical work for sewage pump sta., Washington Ave., to M. A. Larciprete, 1695 Van Vranken Ave., $2,000; plumbing, to E. J. Marco Bros., Inc., 1622 Bway., **$500.**

O., Englewood—E. H. Sleppy, village clk., sewers and sewage disposal plant, relief labor. Bids Feb. 21, gravel, sand, stone, reinforcing steel, sheeting, vitr. sewer pipe, fittings, rein.-con. pipe, valves, shear gates, wire mesh fence.

★**Oklahoma** — Bd. Health, Capitol, Oklahoma City, state wide community sanitation, **WPA. $639,786.**

Pa., Allentown—Sanitary sewers, manholes, various streets. **WPA. $30,569.**

Pa., Brookville—Boro, sanitary intercepting sewerage sys., boro-wide, **WPA. $27,973.**

Pa., Swarthmore—Boro, Boro Hall, extens. sanitary sewerage sys. in various parts of boro, **WPA. $38,329.**

Pa., Waynesboro—Boro, Boro Hall, imprvs. storm and sanitary sewer, water distribution sys., **WPA. $195,784.**

Pa., West Exchange — Mt. Carmel Twp., grading, draining, surfacing, various imprvs., etc., various township-owned roads, in village of West Exchange, **WPA. $78,197.**

S. C., Myrtle Beach — Sanitary sewerage sys., pipe, manholes, c.i. mains, pavements, etc., to Federation Constr. Co., Myrtle Beach, **$58,149. PWA.** Bids 12/19. CD 12/6—ENR 12/8.

Tex., McAllen—Sanitary sewer lines. "Purchase and Hire" plan, **$41,246. WPA.**

Tex., Presidio—Presidio Co., c/o County Judge, installing sanitary devices and lines in rural and suburban areas, "Purchase and Hire" plan. **$25,000. WPA.**

†**Tex., San Antonio**—U. S. Govt., War Dpt., and Bexar Co., storm sewers and drainage ditches, southside Kelly Flying Field. "Purchase and Hire" plan. **$60,000.**

Tex., Victoria—2,140 lin. ft. storm sewers and street asphalt surfacing, force account, **$44,823. WPA.**

Va., Alexandria — General contract storm sewers, to M. Cain Co., Inc., 3315 8 St. N.E., Wash., D. C., **$23,950. PWA.** Bids 12/22. CD 12/21.

Wash., Yakima—Sewers west of Northern Pacific R. R. tracks, **WPA. $375,152.** A. B. Collins, City Hall, engr.

Wis., Milwaukee—Sewers in North 90 St., to W. J. Layznski, Inc., 802 E. Center St., **$5,607;** W. Keefe Ave., to General Contractors, Inc., 494 N. 49 St., **$117,287. PWA.** Bids 2/2. CD 1/23—ENR 1/26.

Wis., Oconomowoc — Sanitary and storm sewer sys., **WPA. $89,995.** J. A. Stemper, city engr.

Wis., Stevens Point—Sewage plant, to Foster-Morris Co., 2140 N. Oakland Ave., Milwaukee, **$203,300;** sewers, to Bahr Constr. Co., Manitowoc. **$19,918. PWA.** Bids 2/7. CD 1/20—ENR 1/26.

Que., Chicoutimi—See "Unclassified."

Que., St. Joseph de Grantham—Sewers, St. Joseph and St. Marcel Sts., day labor. **$25,-000.** J. E. Precourt, municipality clk., will purchase all materials.

BRIDGES, GRADE CROSSINGS

PROPOSED WORK

Missouri—State Hy. Comn., Jefferson City, 40 ft. culvert type bridge over East Branch Eleven Points River, Willow Springs-Douglas co. line Rd., Route SH, Project FAS 2Cl. Howell Co.; 50 ft. bridge over Cooper Branch, Higginsville-Route 24 Rd., Route SJJ, Lafayette Co., WPA project; widening old 40 ft. bridge over Drainage Ditch 44, Risco-Route 61 Rd., Route 62, ¼ mi. east of Risco, Project ER6A1; 58 ft. bridge over Drainage Ditch 43, Risco-Route 61 Rd., Route 62, Project ER

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

RIPRAP FOR DAM, NEBRASKA

OWNER: The Central Nebraska Public Power & Irrigation District, Hastings; George E. Johnston, chief engineer and general manager.

PROJECT: Furnishing and placing riprap for the upstream surface of Kingsley (Keystone) Dam, located about 45 miles northwest of North Platte, Nebr. Riprap is to be placed from elevation 3163 to elevation 3287, where it is to meet a concrete wave wall. Bedding is to be of selected gravel. Bidders were given the alternative of bidding on concrete riprap, hand placed stone, or dumped stone riprap. As the low bids are all for concrete riprap this section deals with that type alone. For a description of the precast concrete riprap, see *ENR* July 14, 1938, p. 54.

BIDS: 12 bids were received from ten bidders, January 31, 1939. Bids for rock riprap (3) ranged from $1,098,450 to $1,266,745. Nine bids on the concrete riprap ranged from $1,011,015 to $1,286,711. Labor rates on the dam are as follows: Skilled, 87½c. per hr.; semi-skilled, 40c. per hr.; common, 35c. per hr.

LOW BIDDERS:

1. A. H. Reed Co., Cheyenne, Wyo. $1,011,015
2. Peter Kiewitt Sons Co., Omaha 1,029,450
3. McCarthy Improvement Co., Davenport, Ia. 1,034,165

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Furn. and place 12-in. Cl. "F" conc. riprap	210,000 s. y.	$2.36	$2.55	$2.75
2. 15-in. Cl. "F" conc. riprap	53,000 s. y.	3.20	3.10	2.97
3. 18-in. Cl. "F" conc. riprap	54,500 s. y.	3.88	4.00	3.27
4. Furn. and windrow-place Cl. "F" conc. riprap	7,000 s. y.	3.88	3.00	3.27
5. Stockpiling Cl. "E" conc riprap	5,000 c. y.	10.00	5.00	5.70
6. Cl. "B" conc. in toe and end wall and in angles, etc. for Cl. "F" riprap	2,000 c. y.	18.00	20.00	25.00
7. Reinf	73,000 lb.	.035	.05	.05
8. Cl. "E" conc. riprap 12-in	8,000 s. y.	2.33	2.75	2.00

OCEAN HIGHWAY BRIDGES NEW JERSEY

OWNER: Cape May County Bridge Commission, New Jersey; R. A. Sharp, engineer.

PROJECT: Contract 9 is for substructure of four main bridges and two small bridges of the Ocean Highway in Cape May County. Contract 4 is for the superstructure of these bridges. The four main bridges are to be of steel and concrete girders, and the two small bridges will be trusses on concrete piles. Four main bridges are located at Townsend's Inlet, Great Channel, Grassy Sound, and Middle Thoroughfare; two small bridges are at Mill Creek and Upper Thorofare. Bids were also taken for a combination of the two schedules, but contracts were awarded on the separate schedules. 400 days are allowed for completion of both contracts.

BIDS: Six bids were received on contract four December 15, 1938, ranging from the contract low of $488,426 to $587,756. Only two bids, $646,219 and $746,412 were received on contract 9. The award was made to Brann & Stuart Co., Philadelphia. McLean Contracting Co., Baltimore, was the other bidder.

LOW BIDDERS (contract 4):

1. Bethlehem Steel Co., Bethlehem, Pa. (contract) $488,426
2. American Bridge Co., Philadelphia 490,289
3. Phoenix Bridge Co., Phoenixville, Pa. 534,774

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Struct. steel	4,050,000 lb.	$0.0608	$0.0613	$0.0625
2. Conc., superstr.	4,020 c. y.	20.00	20.50	30.00
3. Counterweight conc.	240 c. y.	62.00	22.40	30.00
4. Reinf., struct	375,000 lb.	.04	.026	.05
5. Reinf. trusses	180,000 l. f.	.15	.181	.20
6. Timber roadway floor	29 M.b.m.	200.00	170.00	135.00
7. Asph. plank pav	4,280 s. f.	.45	.30	.30
8. Machinery	108,000 lb.	.26	.339	.30
9. Enclosed gear units	L. S.	4,800.00	5,000.00	5,000.00
10. Gasoline engine units	L. S.	3,800.00	4,000.00	3,500.00
11. Elect. equip	L. S.	48,500.00	47,582.00	39,000.00
12. Houses and equip	L. S.	12,000.00	12,500.00	14,000.00

CONTRACT 9

Item	Quan.	Unit Prices (1)	(2)
1. Struct. steel	65,000 lb.	.07	.15
2. Conc. in superstr.	625 c. y.	26.00	30.00
3. Clearing site — Townsend's Inlet bridge approach	L. S.	600.00	5,000.00
4. Excavating Townsend's Inlet bridge approach	5,700 c. y.	.50	.40
5. Embankment — Avalon approach	4,300 c. y.	.70	.50
6. Pier bases	7,680 c. y.	41.00	49.00
7. Conc. substructure	1,745 c. y.	33.00	30.00
8. Rein. struct	361,000 lb.	.05	.06
9. Rein. trusses	17,750 l. f.	.175	.23
10. Timber in fenders	76 M.b.m.	177.00	240.00
11. Fender plates	32,000 lb.	.075	.10
12. Creosoted fender piles	13,400 l. f.	1.21	1.20
13. Creosoted abutment piles	5,850 l. f.	1.30	1.10
14. Conc. test piles	12 ea.	210.00	200.00
15. Steel test piles	8 ea.	200.00	200.00
16. Pile loading tests	10 ea.	300.00	500.00
17. Furn. steel piles	2,470,000 lb.	.03227	.035
18. Driving steel piles	32,900 l. f.	.52	.60
19. Steel pile splices	10,000 lb.	.37	.15
20. 18-in. precase conc. piles	3,750 l. f.	3.82	5.00
21. 20-in. precast conc. piles	8,450 l. f.	4.72	5.50
22. 22-in. precase conc. piles	3,450 l. f.	5.34	6.00
23. Pier riprap	1,500 tons	3.60	5.00

SANITARY AND STORM SEWER, PORT ARTHUR, ONT.

OWNER: City of Port Arthur, Ont.; S. E. Flook, city engineer.

PROJECT: Construction by day labor of separate storm and sanitary sewers. The 15-in. sanitary sewer is laid at a depth of 13 ft. and the 27-in. storm sewer is laid at a depth of 16 ft. The job was completed Dec. 23, 1938. Manholes include cast iron covers, frame and steps. Cement cost was $3 per bbl.; sand $2.25 per cu.yd. Wages range from 50 cents to $1.05 per hr.

Item	Quan.	Cost
1. Clearing site	L. S.	$60.00
2. Excav. and backfill	5,000 c. y.	1.75
3. Excav. manholes	500 c. y.	1.75
4. Excav. rock and earth backfill	2,400 c. y.	8.00
5. Conc. manholes	14 ea.	280.00
6. Conc. pipe 27-in	900 l. f.	3.00
7. Vit. tile pipe; 1,600 l. f. of 15-in. and 700 l. f. of 21-in	L. S.	2,400.00
8. Laying 15-in. tile	1,600 l. f.	.25
9. Laying 21-in. and 27-in. tile	1,600 l. f.	.30
10. Conc	L. S.	1,950.00
11. Supervision, etc	L. S.	74,068.00

HARBOR WORK, CALIF.

OWNER: Oxnard Harbor District, Oxnard, Calif.: Quinton, Code & Hill, Leeds & Barnard, Los Angeles, Engineers.

PROJECT: Dredging and constructing rock jetties as a part of Hueneme Harbor project. Contract is to be completed by

(Unit Prices continued on second following page)

Bridges, etc. (Continued)

6A1; widening 50 ft. bridge over Drainage Ditch 42, Route 62, Project ER 6A1, 2½ mi. east of Risco, all foregoing in New Madrid Co.; 102 ft. bridge over Main Ditch Dist. 29, East Prairie-East Rd., Route 55, Project ER 4-1; 92 ft. bridge over Main Ditch Dist. 23, Route 60, Project FA 7A2, both Mississippi Co.; 34 ft. culvert type bridge over Bellew Creek, O'Fallon-Weldon Springs Rd., Route SK, Project FAS 842 A, St. Charles Co.; 44 ft. culvert type bridge over branch of Wild Horse Creek, State Rd. Route 50 to Franklin Co., Route St., Proj. FAS 45-B1, St. Louis Co.; 27 ft. culvert type bridge over West Branch Eleven Points River, State Rd. from Willow Springs to Douglas Co. line, Project FAS 2C1, Route SH, Howell Co. C. W. Brown, Jefferson City, engr. Hy. Comn.

★**New Jersey** and **Pennsylvania**—L. Focht, ch. engr. Delaware River Joint Toll Bridge Comn., Trenton, N. J., new bridge over Delaware River between Montague, N. J. and Upper Black Eddy, Pa., to replace old structure. $600,000.

N. Y., Elmira—Improving Lake St. bridge, incl. resurfacing. $26,960. Funds provided in budget. R. Klebes, city mgr., will engage consulting engr. soon, to make survey and recommendations.

N. Y., Red House—Cattaraugus Co. Hy. Dpt., Little Valley, steel, concrete highway bridge over Bucktooth Run on Sawmill Run Rd., Allegany Indian Reservation; similar structure on Randolph-Rutledge Hy., 1 mi. south of Rutledge. $40,000 plus. W. Bowen, Little Valley, co. supt.

★**O., Cleveland**—C. B. Patterson, city purch. agt., steel, concrete bridge over Cuyahoga River at Columbus Rd. $700,000. W. Watson & Assoc., 4614 Prospect Ave., engrs.

Oklahoma—State Hy. Dpt., Oklahoma City, preliminary plans overpass, U.S. 70, Ardmore, Carter Co., $75,000; overpass, Mulberry St., Durant, Bryan Co., $60,000; 30 ft. roadway bridge replacing an 18 ft. concrete bridge, Bristow, Creek Co., $35,000. V. T. Moon, Capitol, Oklahoma City, engr.

Oklahoma—State Hy. Dpt., Oklahoma City, overpasses over Frisco R.R. at Sapulpa, $90,000; over Missouri Pacific R.R. at Claremore, $75,000; over Missouri, Kansas & Texas Ry. at Pryor, $60,000. V. T. Moon, Capitol, Oklahoma City, engr.

Pa., Titusville—Comrs. Crawford Co., Meadville, and City of Titusville, steel, concrete bridge over Oil Creek, Franklin St. $25,000 plus. **Maturity early in summer.** J. M. Fay, city engr.

Tex., Port Arthur—N. D. Roder, mayor, bridge, drainage structures, paving, in Del Mar addn. $225,000. M. D. Gates, city engr. J. B. Converse & Co., Port Arthur, engrs.

Wash., Tacoma—State Hy. Dpt., Olympia, bids before summer, concrete bridge, upright piers, concrete slab deck, over Tacoma-Eastern Gulch, E. 40 St. $50,000. L. V. Murrow, Olympia, engr.

N. B., Doaktown—Hon. W. S. Anderson, minister P. Wks., Fredericton, rejected bids Jan. 16, riveted steel arch span bridge over Miramichi River, for Provincial Government. New bids will be called for creosoted timber bridge, creosoted floor, asphalt plank covering. $40,000. C. B. Croasdale, Dpt. P. Wks., Fredericton, engr. CD 12/15—ENR 12/22.

N. B., Fredericton—Province of New Brunswick, 925 ft. stone rubble masonry type bridge with 60 ft. rein.-con. arch over Jones Forks River, Douglas Parish, York Co. Over $25,000.

Ont., Chemong—Peterboro Co. (Peterboro), bridge or structure by filling in at site of old mile-long floating bridge. $40,000. A. E. Chalmers, Peterboro, co. engr.

Ont., Sudbury—City Clerk bids soon steel, concrete bridge over Canadian Pacific Ry. tracks, Elm St. $200,000. Railway and Ontario Hy. Dpt. will also share cost. W. B. McMullen, City Hall, engr.

Que., Rimouski—Province of Quebec, Hon. A. Cariguon, minister of Roads, Quebec City, vehicular subway, Main St. $60,000. Dpt. Roads, Quebec City, engrs.

Sask., Saskatoon—City Clerk bids soon, subway under Canadian National Ry. tracks, 20 St. $80,000. CD 5/16—ENR 5/19.

BIDS ASKED

Bids Asked February 28

Virginia—State Dpt. Hys., Richmond, 266 ft. bridge, Route 221, Carroll Co.; 1.4 mi. underpass, C. & O. R.R., Route 250, Augusta, Co.

Bids Asked March 1

Ia., Davenport—Scott Co., 2 bridges, one I-beam 210x24 ft. in Pleasant Valley Twp., and other I-beam 102x24 ft. in Butler Twp. PWA. J. M. Malloy, co. engr.

Bids Asked March 2

Mass., Cambridge—Metropolitan Dist. Comn., 20 Somerset St., Boston, W. E. Whittaker, secy., overpass and traffic circle, Cottage Farm Bridge, Sect. 3, overpass at Cottage Farm Bridge, Memorial Dr. $275,000, PWA.

Bids Asked March 3

Mo., Finey—St. Clair Co. (Osceola), rebuilding 550 ft. suspension bridge over Osage River, at county line, for Henry Co. (Clinton) and St. Clair Co. (Osage). $25,000. J. W. Shikles & Co., New York Life Bldg., Kansas City, Mo., engrs. CD 1/3—ENR 1/12.

Mo., St. Louis—City, c/o B. L. Brown, pres. Bd. Pub. Serv., City Hall, cleaning, painting structural steel work of Southern approach of St. Louis Municipal bridge over Mississippi River. $30,000.

O., Marion—Bd. Comrs., Marion Co., 14 ft. concrete slab bridge on Rd. 105 B, and one on Rd. 123 E, concrete abutments for bridge on Rd. 26 B, and concrete slab top culvert Rd. 67-P. Over $125,000. PWA. C. H. Tozzer, Courthouse, co. engr. CD 10/7—ENR 10/13.

Bids Asked March 4

O., Columbus—Bd. Comrs. Franklin Co., R. W. McDonald, clk., for Clinton Twp., Bridge 334 on North Bway. in Columbus over Olentangy River. $291,031. PWA. A. C. Slade, co. engr.

Bids Asked March 7

★**New York**—H. A. Lane, ch. engr. Baltimore & Ohio R. R., at office asst. engr Staten Island Rapid Transit Ry. Co., Springstead Bldg., Great Kills, grade crossing elimination, etc., Great Kills to Huguenot, Staten Island. $950,000. Bids 1/4 rejected. PWA; adv. ENR 2/23. CD 12/14—ENR 12/22.

O., Lorain—Bd. Comrs. Lorain Co., F. C. Ruth, clk., Elyria, concrete piers and caisson work, bascule building, for Erie Ave. bridge, Contr. 4. $350,000. F. R. Walker, 2341 Carnegie Ave., Cleveland, archt. W. Watson & Assoc., 4614 Prospect Ave., Cleveland, engrs.

Bids Asked March 17

Kentucky—State Dpt. Hys., Frankfort, steel superstructure for bridge over Kentucky River at Irvine, Estill Co.; overhead bridge over I. C. R. R. on Dawson Springs-Providence Rd., FAGS 354 C(1) B; overhead bridge, approaches over I. C. R. R. Dawson Springs-Providence Rd., FAGS 354 B (1) B, both Hopkins Co., steel superstucture for bridge over North Fork Kentucky River, on Jeff-Blackey Rd., at Ulvah, Letcher Co.

Bids Asked March 18

O., Lorain—Bd. Comrs. Lorain Co., F. C. Ruth, clk., Elyria, B. & O. R.R. underpass, steel, concrete, for proposed E. 21st St. bridge. $140,000. F. R. Walker, 2341 Carnegie Ave., Cleveland, archt. W. Watson & Assoc., 4614 Prospect Ave., Cleveland, engrs.

Bids Asked About April 1

N. Y., Salamanca—State Dpt. P. Wks., Albany, steel highway bridge over Allegheny River, Center St. $175,000. C. R. Waters, State Office Bldg., Buffalo, dist. engr. CD 4/21—ENR 4/28.

LOW BIDDERS

★**Maryland** and **Virginia**—State Roads Comn., Federal Reserve Bank Bldg., Baltimore, Md., Feb. 14, Contr. 2, west abutment, Approach Trestle Bents Nos. 1 to 59 and Piers Nos. 1 to 20, etc., Potomac River Bridge, between Ludlow Ferry, Md., and point near Dahlgren, Va., from Merritt, Chapman & Scott, 17 Battery Pl., New York. $2,089,324. Est. $2,120,000. CD 1/25—ENR 1/26.

CONTRACTS AWARDED

Arizona—State Hy. Comn., Phoenix, steel plate girder bridge near Winslow, Navajo Co., to W. E. Bondurant, Roswell, N. M., **$130,289.** Bids 2/7. CD 1/27.

California—C. H. Purcell, engr. State Hy. Dpt., 808 State Bldg., Los Angeles, 5 span, 127 ft. grade separation over San Diego & Arizona Eastern Ry., La Mesa, San Diego Co., to Oberg Bros., 6024 Miramonte Blvd., Los Angeles, **$25,100.** Bids 1/26. CD 1/9—ENR 1/12.

Calif., Los Angeles—Metropolitan Water Dist., 306 W. 3 St., F. E. Weymouth, engr., encasing lower portions of steel work of existing highway bridge over Colorado River, near Topock, Ariz., Spec. 291, force account. Over **$25,000.** Bids 11/4 rejected. CD 10/20.

★**Fla., De Funiak**—Walton County Bridge Auth., bridge over Choctawatchee Bay, Contr. A, to G. D. Auchter Constr. Co., foot of East Adams St., Jacksonville, **$427,141;** Contr. B, to Shell Producers Co., 115 S. Water St., Tampa, **$185,741. PWA.** Bids 2/7. CD 2/3.

Ia., Cherokee—Cherokee Co., H. M. Montgomery, 18 concrete box culverts, to W. T. Forgie, Sioux Center, **$13,461.** Bids 2/7. CD 1/30—ENR 2/2.

Ia., Waterloo—State Hy. Comn., Ames, Cedar River Bridge on Park Ave., to A. Guthrie & Co., 141 E. 4 St., St. Paul, Minn., **$203,797.** Bids 1/31, awarded 2/15. CD 1/5—ENR 1/12.

Kansas—State Hy. Dpt., at office Co. Clerk, Beloit, for Bridge 0.9, FA371-I, Mitchell Co., to Rhoades Constr. Co., Newton. **$17,500.** Bids 12/20. CD 12/5—ENR 12/8.

Louisiana—State Hy. Comn., Baton Rouge, for Bayou D'Arbonne Bridge, approaches, Ouachita Parish, to Austin Bridge Co., Clarence St., Dallas, Tex., **$48,917.** Bids 12/21. CD 11/28—ENR 12/1.

★**Maryland**—State Roads Comn., Baltimore, L. H. Steuart, secy., substructure Susquehanna River bridge, between Havre de Grace and Perryville, Contr. H-232-2-437, C. E. Harford Co., to R. C. Reitz, Lancaster, Pa., **$960,712.** Est. $1,200,000. Bids 1/31. D 2/3—ENR 2/9.

Mich., Dearborn—M. J. O'Brien, chn. Wayne Co. Rd. Comn., Detroit, pedestrian grade separation bridge, approaches, steel, concrete superstructure, concrete fdn. piers, Miller Rd., to Couse & Saunders, 12740 Lynden Ave., Detroit, **$44,320. PWA.** Bids 2/1. CD 1/17—ENR 1/19.

N. J., Cape May Courthouse—Bd Freeholders Cape May Co., Courthouse, Contr. A-2 [illegible] steel beams, cement mortar protection and riprap for Cedar Swamp and Sea Isle Drawbridges, to E. W. Lewis, Jr., Inc., 285 Madison Ave., New York, **$7,782;** Contr. C [illegible] constructing trestle roadway deck and revisions to structural parts, to Versagi Bros. Constr. Co., 119 E. 17th St., North Wildwood, **$14,969. PWA.** Bids 1/19. CD 1/9—ENR 1/12.

New York—State Dpt. P. Wks., W. S. Greene, supt., State Office Bldg., Albany, raising Freemans bridge, and 3 other canal bridges at Amsterdam, Fonda and Fort Plain, Schenectady and Montgomery Counties, to J. Bocci, 80 William St., Hudson Falls, **$61,966.** Bids 1/17. CD 12/13—ENR 12/15.

★**New York**—State Dpt. P. Wks., Div. Hy., Albany, Great Neck Road Separation, 0.82 mi. Suffolk Co., to Good Roads Eng. & Contg. Co., Inc., Wantagh, **$108,338.** est. $138,421***Canajoharie-Palatine Bridge, Montgomery Co., to McLain Constr. Corp., 1260 Hertel Ave., Buffalo, **$253,187,** est. $300,385 ***65 ft. girder bridge, concrete approaches, etc. 0.78 mi. Orange Co., to Lane Constr. Co., 35 Colony St., Meriden, Conn., **$146,909,** est. $193,548. Grand total $508,434. Bids 1/17. CD 12/29—ENR 1/5.

N. Y., Evans—Rein.-con. pedestrian subway under Lake Shore Rd. **WPA.** Over **$25,000.**

North Carolina — State Hy. & P. Wks. Comn., Raleigh, structures on Project 8252, Cleveland Co., to T. M. Strider, Cotton States Bldg., Nashville, Tenn., **$38,678.** Est. $25,000-$50,000. Bids 1/31, awarded 2/9. CD 1/20—ENR 1/26.

Tex., Georgetown — Williamson Co., Co. Judge, bridge San Gabriel River west of here and west of Round Rock, "Purchase and Hire" plan, **$86,072. WPA.**

Utah—State Road Comn., Salt Lake City, concrete box culvert, etc., Kane Co., to W. W. Clyde & Co., Springville, **$10,195.** Bids 12/19. CD 12/12.

Vermont—State Hy. Dpt., Montpelier, H. E. Sargent, ch. engr., 2 bridges at Fayston, Contr. 33, to Bristol Contg. Co., Bristol, N. H., **$26,840** est. $26,531; bridge at Jamaica, Contr. 35, to Ryan & Densmore, Inc., Claremont, N. H., **$17,746** est. $16,006. Bids 1/27. CD 1/19.

West Virginia—State Rd. Comn., Charleston, Bridge 1534, Gilmer Co., to Tri State Constr. Co., Huntington, **$34,474***Bridge 6941, Harrison Co., to R. E. Mills, 325 W. 4 St., Frankfort, Ky., **$5,121***Bridge 1536, Tyler Co., to Fuccy Bros., Weston, **$31,144***Bridge 1301 Wyoming Co., to Price Constr. Co., Huntington, **$15,524.** Grand total $86,263. Bids 12/20. CD 12/9—ENR 12/15.

Wyoming — Public Roads, Denver, Colo. bridge, approaches Big Horn Co., to T. J. Pelesky & Son, Sheridan, **$21,955.** Bids 1/31. CD 1/24.

Ont., Pembroke—R. M. Smith, deputy minister Dpt. Hys., Toronto, widening bridge over Muskrat River, to Holmes & Jamieson, Kemptville, **$35,000.** Bids 2/7. CD 2/3.

STREETS AND ROADS

BIDS ASKED

Bids Asked February 27

N. Y., Long Island City—President Queens Boro, Queens Subway Bldg., 21-10 49 Ave., regulating, grading, curbing, recurbing, laying sidewalks, removing replacing trees, furnishing, delivering material, rented equip., for imprv. 173 St.; widening, furnishing material, rented equip., improving Baisley Blvd.; culvert, drainage ditches, 57 Ave.; imprv. New York Blvd.

Bids Asked February 28

O., Hamilton—Comrs. Butler Co., F. Hammerle, engr., Courthouse, surface treating, retreading 17 roads in various parts county. $115,000. PWA.

Bids Asked March 1

N. Y., St. George—Boro President, Richmond Boro, Boro Hall, asphalt block paving William St. from Bay St. to Bay to Van Duzer Sts. and Boyd St. from Cedar to Wright Sts.

Bids Asked March 2

Oregon — Oregon Hy. Comn., Auditorium, Pub. Serv. Bldg., Portland, paving Oregon Coast Hy. between Marshfield and new overpass at Bunker Hill, Coos Co. (R. H. Baldwin, Salem, hy. engr.

Bids Asked March 3

Kansas—State Hy. Dpt., Topeka, light type surfacing 2.992 mi. FAS 44 B, 3 mi. FAS 45 A, both Stafford Co. A. B. Nuss, Topeka, engr.

(Contract Unit Prices continued from page 13)

July 20, 1940. Transportation facilities by rail, highway and water are available. Pumping distance of dredged material is short. Areas near the shore-line in the immediate vicinity of the work will receive most of this dredged material. Rock in jetties is to be placed from barges bringing rock from Catalina Island, a 60-mile to 70-mile tow.

BIDS: Nine contractors submitted bids on one or more of the five schedules. Only two, however, bid on all five. Standard Dredging Corp., Los Angeles, made the low bid of $937,410 and was awarded the contract. Case Construction Co., San Pedro, bid $1,253,050. Minimum labor rates are as follows: Skilled, $1.25 per hr.; semi-skilled, 75c. per hr.; common, 62½c. per hr.

Item	Quan.	Unit Prices (1)	(2)
1. Dredging	4,250,000 c. y.	$0.117	$0.1274
2. Cl. A west jetty stone	38,000 tons	2.56	4.50
3. Cl. B west jetty stone	24,000 tons	2.56	4.30
4. Cl. C west jetty stone	3,000 tons	2.56	4.30
5. Cl. A east jetty stone	26,000 tons	2.56	4.50
6. Cl. B east jetty stone	20,000 tons	2.56	4.30
7. Cl. C east jetty stone	4,000 tons	2.56	4.30
8. Reinf. conc. beacon light foundations	80 c. y.	30.00	25.00
9. Revetment stone at wharf	17,000 tons	2.56	4.00
10. Revetment stone at central basin and entrance channel	39,000 tons	2.56	3.70

WATER MAINS, FLORIDA

OWNER: Orlando Utilities Commission, Orlando, Fla.; H. M. Beardall, president; M. W. Brown, general manager; Wylie W. Gillespie, consulting engineer.

PROJECT: Construction of cast iron pipe water main extensions. Pipe is to be laid in 36-in. trench along city streets. Time for completion is 120 days. Minimum labor rates are as follows: skilled $1.00 per hr.; semi-skilled, 50c. per hr.; common, 30c. per hr.

BIDS: Eight bids were received Jan. 9, 1939, ranging from $119,834 to $152,549.

LOW BIDDERS:

1. Boyce Co., Clearwater, Fla. $119,834
2. Langston Construction Co., Orlando 125,915
3. Espy Paving & Construction Co., Savannah ... 127,570

Item	Quan.	Unit Prices (1)	(2)	(3)
1. 6-in. cast iron pipe water mains	115,000 l. f.	$ .94	$ .98	$ .99
2. 6-in. x 6-in. C.I. cross	111 ea.	12.00	14.00	15.00
3. 6-in. x 6-in. C.I. tee	146 ea.	9.00	11.00	12.25
4. 6-in. x 4-in. reducer	11 ea.	4.50	6.00	6.00
5. 6-in. plugs or caps-tapped for 2-in. pipe and plug	140 ea.	2.00	3.00	3.25
6. 6-in. plugs or caps	117 ea.	2.00	2.50	2.75
7. Misc. fittings	5,000 lb.	.07	.08	.08
8. 6-in. gate valve with box	120 ea.	25.00	24.00	29.90
9. Fire hydrants	54 ea.	50.00	56.00	59.80
10. Repair brick pav.	5,500 l. f.	.10	.30	.20
11. Rep. conc. walks and drives	2,100 l. f.	.50	.15	.35
12. Rep. rock base surface treat. pvmt.	1,250 l. f.	.50	.15	.15
13. Rep. state road	L.S.	60.00	40.00	30.00
14. Pipe line R. R. crossings	3 ea.	50.00	250.00	40.00
15. Sheeting left in place—lumber	1 M.b.m.	40.00	30.00	35.00

PIER SHED SUBSTRUCTURE SEATTLE, WASH.

OWNER: Port of Seattle Commission; Col. W. C. Bickford, engineer.

PROJECT: Construction of substructure for two pier sheds at Pier 40. Size 90 x500 ft. Stipulated contract time is 117 days; transportation by rail, highway and water is available. Owner is furnishing used piling.

BIDS: Three bids were received Dec. 5, 1938, ranging from the contract low of $214,160 to $218,434. Wage rates are as follows: skilled, $1.50 per hr.; semi-skilled, $1.25 per hr.; common, 90c. per hr.

LOW BIDDERS:

1. Manson Construction & Engineering Co., Seattle (contract) $214,160
2. General Construction Co., Seattle 216,570
3. C. W. Larsen, Seattle 218,434

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Preparation of site, incl. setting up, moving 2 bldgs	L.S.	$10,000.00	$9,600.00	$18,200.00
2. Creo. piling	150,000 l. f.	.69	.67	.65
3. Untr. piling	3,000 l. f.	.40	.30	.30
4. Pulling piling from exist. struct	560 ea.	5.00	5.00	3.00
5. Driving used piling	250 ea.	8.00	8.00	7.00
6. 8-lb. pressure-treated creo., lbr	360 M.b.m.	68.00	70.00	70.00
7. ¾-lb. chromated zinc chloride treated, lbr	325 M.b.m.	60.00	60.00	61.00
8. Untr. lbr	210 M.b.m.	35.00	35.00	40.00
9. Revamping railrd. system	L.S.	6,500.00	6,800.00	6,630.00
10. No. 1 relay 75-lb. rails	20 tons	40.00	45.00	37.50
11. No. 7 turnouts	2 ea.	500.00	400.00	335.00
12. No. 6 turnout	1 ea.	450.00	370.00	320.00
13. ⅞ x 7 x 9 tie plates	7,000 ea.	25	25	25
14. 6 x 8 x 8 railroad ties, treated	90 M.b.m.	52.00	60.00	45.00
15. Clear., excav., lower. pipelines, preparatory to paving	L.S.	3,500.00	4,800.00	3,640.00
16. 8-in. conc. pav	1,400 s. y.	2.50	3.50	2.35
17. Steel sheet piling anchors	L.S.	1,500.00	900.00	1,055.00
18. Cast steel mooring cleats	14 ea.	75.00	40.00	76.00
19. Steel H pile dolphin, type A	1 ea.	1,200.00	1,400.00	1,140.00
20. Steel H pile dolphin, type B	3 ea.	1,000.00	1,300.00	1,000.00
21. 4-in. asph. planking	20,500 s. f.	.16	.18	.20
22. Untr. lbr., sec. B	250 M.b.m.	40.00	45.00	48.00
23. Treated lbr., sec. B	8 M.b.m.	90.00	100.00	115.00
24. Used piling, sec. B	50 ea.	8.00	10.00	12.00

SEWER, CLEVELAND

OWNER: City of Cleveland; R. Hoffman, engineer.

PROJECT: Construction of Big Creek intercepting sewer from Cuyahoga River to Cleveland's Southerly Treatment Works. Project consists of 3,913 ft. of 6 ft. 3-in. circular brick sewer in tunnel. Labor rates range from $1.00 to $1.75 per hr.

BIDS: Eight bids were received January 5, 1939, ranging from the contract low of $153,961 to $189,099.

LOW BIDDERS:

1. National Const. Co., Cleveland (contract) $153,961
2. The Rossi Marcelletti Co., Cleveland 168,216
3. The Kalill Co., Cleveland 170,483

Item	Quan.	Unit Prices (1)	(2)	(3)
1. 6-ft. Cir. "C" brick sewer in tunnel	2,951 l. f.	33.40	37.00	40.00
2. 6-ft. 3-in. Cir. "E" brick sewer in tunnel	300 l. f.	44.80	40.00	54.00
3. 6-ft. 3-in. Cir. "C" brick sewer open cut	93 l. f.	24.45	30.00	17.60
4. 6-ft. 3-in. Cir. "E" brick sewer, open cut with squared out bottom	559 l. f.	27.90	40.00	30.00
5. Brick increaser (5-ft. Cir "C" to 6-ft. 3-in. Cir. "C")	6 l. f.	25.00	25.00	18.00
6. Manhole complete	1 only	50.00	2,000.00	100.00
7. Manhole at station 167-96.21	1 only	3,300.00	7,000.00	4,000.00
8. Drop manhole at station 176-11.21	1 only	16,881.48	7,000.00	7,000.00
9. Manhole at station 189 & 17.34	1 only	50.00	100.00	1,200.00
10. Junction chamber complete	1 only	1,000.00	3,000.00	3,000.00
11. 6-in. underdrain imbedded in slag, cinders or broken stone	559 l. f.	.60	1.00	.50
12. R.C. headwall	1 only	200.00	200.00	500.00
13. 15-in. stub and bulkhead	1 only	10.00	15.00	2.00
14. Make connection to existing sewer	2 ea.	20.00	5.00	15.00
15. Hard wood grillage in place	21 M.b.m.	45.00	35.00	35.00
16. Native hardwood sheeting	5 M.b.m.	25.00	35.00	35.00
17. Plank and timber left in bench	5 M.b.m.	35.00	35.00	35.00
18. Additional excav	25 c. y.	3.00	3.50	2.00
19. Add. cl. "A" conc	5 c. y.	20.00	15.00	12.00
20. Add. cl. "B" conc	5 c. y.	15.00	12.00	10.00
21. Add. cl. "C" conc	5 c. y.	12.00	10.00	9.00
22. Add. cl. "D" conc	5 c. y.	12.00	8.00	8.00
23. Add. manhole steps	10 ea.	2.50	2.00	.50
24. Add. manhole rim & cover	1 only	20.00	15.00	18.00
25. Common labor	20 hr.	1.25	1.00	.90
26. Foreman	20 hr.	2.00	1.50	1.25
27. Tradesman	20 hr.	2.60	1.25	1.35
28. Tradesman helper	20 hr.	1.50	1.00	1.00
29. Truck, including driver	50 hr.	3.00	2.50	2.00
30. Cement	25 sacks	.75	.50	.60
31. Additional reinf	100 lb.	.06	.10	.04
32. Slag	10 tons	3.50	3.00	1.50
33. Sand	10 tons	3.00	1.50	1.50
34. Add shale brick masonry	25 c. f.	1.00	5.00	1.00

Streets and Roads (Continued)

Bids Asked March 14

†**Ill., Chanute Field (Rantoul)**—Con. Q. M., Chanute Field, rein.-con. paved roads, curbs, concrete sidewalks; adv. ENR 2/23.

Bids Asked March 17

Kentucky—State Dpt. Hys., Frankfort, grading, draining, low type surfacing 1.95 mi. Fisherville-Clark Station Rd., Jefferson and Shelby Counties; roadside imprv. 13.615 mi. Bardwell-Clinton Rd., Carlisle and Hickman Counties; 0.76 mi. Mayfield-Fulton R., 0.804 mi. Mayfield-Paducah Rd., both Graves Co.; 10.622 mi. Henderson-Dixon Rd., Henderson Co.; 12.587 mi. Clinton-Fulton Rd., Hickman and Fulton Counties; 5.064 mi. Smith-Paducah Rd., Livingston Co.; 1.105 mi. Eddyville-Kuttawa Rd., Lyon Co.

Takes Bids About April 10

★**New York**—State Dpt. P. Wks., Albany, widening 12 mi. U.S. Route 20, between Fredonia and Westfield, Chautauqua Co. $500,000. C. R. Waters, State Office Bldg., Buffalo, dist. engr.

Bids Asked

Calif., San Mateo—B. Rhodes, city clk., grading, armor coat with natural rock seal coat on stabilized rock base paving, etc., Indian Ave.

Louisiana—State Hy. Comn., Baton Rouge, received no bids Nov. 30, grading, etc. 2.01 mi. Calhoun-Cheniere Hy., Route 4, Project 4654, WPH 114B (3), Ouachita Parish. CD 11/9—ENR 11/17.

Miss., Kosciusko—Rejected bids Nov. 14, imprv. roads. $65,000. Project abandoned. CD 11/2.

T. H., Hickam Field—Con. Q. M., rejected bids Jan. 27, pavement and exten. to water-main. Will readvertise. CD 1/25.

CONTRACTS AWARDED

Ala., Birmingham—Street imprvs., to J. Fromhold, 721 Mims St., **$2,350*****to Dunn Constr. Co., Chamber Commerce Bldg., **$14,391*****to Warren Bros. Road Co., Birmingham, **$17,652.** Total est. $40,345. Bids 1/31. CD 1/9—ENR 1/26.

Ala., Montgomery—Asphalt paving streets, Contrs. T-2-C-10, to John S. Hodgson & Co., N. Perry St., **$39,838.** Est. $42,000. Bids 2/7. CD 1/24—ENR 1/26.

California—J. H. Skeggs, dist. engr. State Hy. Comn., State Bldg., San Francisco, applying diesel oil to roadside vegetation 129 mi. hy. Alameda, Contra Costa and Santa Clara Counties, and 206.9 mi. Sonoma, Marin and Napa Counties, to Close Building Supply, 721 "C" St., Hayward, **$3,353** and **$5,643** respectively. Bids 2/8. CD 2/3.

Calif., Palo Alto — Palo Alto Properties, Inc., 529 Ramona Ave., paving, curbing, guttering, walks, to Piazza & Huntley, 195 N. 6 St., San Jose, **$27,692*****storm water sewers, water connections, to W. J. Tobin, 3701 Balfour St., Oakland, **$14,089*****electrolier light sys., to R. M. Butcher, 1020 Sherwood St., San Jose, **$2,985*****underground electricity and telephone lines, to H. E. Conner, 1222 Whipple Ave., Redwood City, **$5,325,** all above work in 21 acre real estate development bounded by California, Seale, Louis and Middlefield Rds. Grand total $50,091.

D. C., Wash.—Dist. Comrs., District Bldg., addn. to Smothers School, 44 and Cay Sts. N.E., to J. W. Hunt Co., 316 Randolph Pl. N.E., **$151,800.** Bids 2/2. CD 1/13—ENR 1/19.

Idaho, Boise—Ada Co., grading, surfacing, installing or imprv. roads, relief labor. **$60,000.**

Ill., Hillsboro — Montgomery Co., imprv. 10.02 mi. Sect. 14A-MFT, to J. C. Bremer, Hillsboro, **$51,952.** Bids 2/8. CD 1/31—ENR 2/2.

Ia., Cherokee—Cherokee Co., H. M. Montgomery aud., imprv. 29 mi. Cherokee Co., to Ira Van Buskirk, Hawarden, **$40,085.** Bids 2/7. CD 1/30—ENR 2/2.

Louisiana—State Hy. Comn., Baton Rouge, grading, surfacing 1/988 mi. Lamar-West Hy., Route 637, Project 1256, Franklin Parish, to Martin & Nichols, Alexandria, **$24,977.** Bids 11/2. CD 10/13—ENR 10/20.

Maryland—State Roads Comn., Baltimore, bituminous road mix surfacing 1.27 mi. Contr. C1-197-1-550, Carroll Co., to T. Edgie Russell Co., Frederick, **$26,941.** Bids 1/10, awarded 2/14. CD 1/4.

Minn., Elbow Lake — Grant Co., grading roads, to Strom Constr. Co., Moorhead, Sect. 1 **$10,938,** Sect. 3 **$5,216,** Sect. 14 **$4,159,** Sect. 21, **$3,757*****to B. J. Loher, Morris, Sect. 6 **$3,032,** Sect. 7 **$3,340,** Sect. 8 **$3,862*****to John Dieseth Co., Fergus Falls, Sect. 16 **$2,190,** Sect. 17 **$2,195,** Sect. 18 **$2,018.** Grand total $40,707. Bids 1/24. CD 1/17—ENR 1/19.

†**Mississippi**—Public Roads, Wash., D. C., imprv. 1.159 mi. Warren Co., to Barber Bros. Contract Co., Reymond Bldg., Baton Rouge, La. **$83,494.** Est. $85,000. Bids 2/9. CD 1/17—ENR 1/19.

Miss., Pascagoula — Asphaltic penetration treating 40,000 sq. yd. streets, to R. B. Tyler Co., Louisville, Ky. Est. **$30,000.** Bids 1/7. CD 12/22—ENR 12/29.

†**Montana**—Public Roads, Missoula, imprv. 4.112 mi. Missoula Co., to Union Constr. Co., Inc., Great Falls, **$104,303.** Bids 12/28. CD 1/13—ENR 12/15.

New Jersey — At office General Manager, Port New York Auth., 111 8 Ave., New York, miscellaneous paving between Hudson Co. Blvd. and New Jersey State Route 3, Lincoln Tunnel-New Jersey approach, Contr. MHT-76, to George W. Brewster & Son, Inc., Bogota, **$97,565.** Bids 2/7. CD 1/13—ENR 1/19.

N. J., Pitman—Boro imprv. road, new road surface, grading, etc., **WPA. $48,169.**

N. J., Trenton—Imprv. streets throughout city, sidewalks, manholes, laying pipe, constructing roadway on old canal site, **WPA. $37,716.**

New York—State Dpt. P. Wks., Div. Hys., Albany, imprv. 2 mi. hy. Steuben Co., to Hornell Constr. Corp., 212 Main St., Hornell, **$82,604,** est. $114,476; 2.51 mi. Columbia Co., to Lane Constr. Co., 35 Colony St., Meriden, Conn., **$202,395,** est. $275,436. Bids 1/19. CD 12/29—ENR 1/5.

N. Y., Albany—Dpt. P. Wks., City Hall, granite block on concrete paving Bway., **WPA. $100,000** plus.

N. Y., Belmont and **Johnsonburg**—Clearing, grading, widening, etc., Chataugay Rd., Belmont, and constructing 0.284 mi. road Johnsonburg, **WPA. $25,000** plus.

N. Y., Delhi—Bd. Supervs., Delaware Co., paving, maintenance various hys., own forces, **$142,400.** W. J. Howland, hy. supt.

N. Y., Malone — Grading, surfacing, installing curbs, catchbasins, etc., various streets, **WPA. $25,000** plus.

N. Y., Malone—Subbasing, widening, etc., 1.45 mi. Junction Rd., **WPA. $25,000.**

N. Y., New York—J. J. Lyons, pres. Bronx Boro, Bronx County Bldg., E. 161 St. and Grand Concourse, to Del Balso Asphalt Corp., 500 Zerega Ave., sheet asphalt paving Hall Pl., **$4,011;** E. 141 St., **$3,431;** E. 155 St., **$7,187*****to Barry Contg. Co., 226-06 Laurelton Blvd., Laurelton, granite block on concrete fdn., rein.-con. paving Willis Ave., E. 135, Exterior and E. 138 Sts., **$178,718*****to Manhattan & Bronx Cinder Co., 440 Exterior St., asphalt block repaving E. 139 St., **$11,765.** Grand total $205,112. Bids 12/29. CD 12/20—ENR 12/22.

N. Y., Rochester—See "Sew. and W. Disp."

N. Y., Whitehall—Grading, draining, widening, gravel travel course on gravel subbase surfacing 2.31 mi. Winters Rd., **WPA.** Over **$25,000.**

†**North Carolina** — Public Roads, Winder Bldg., Wash., D. C., imprv. 5.1 mi. Haywood and Transylvania Counties, to Albert Bros., Inc., Salem, Va., **$322,794.** Bids 1/5. CD 12/6—ENR 12/8.

North Carolina—State Hy. & P. Wks. Comn., Raleigh, imprv. 3.57 mi. Project 175, Gates Co., to Coastal Constr. Co., Florence, S. C., **$30,383.** Est. $25,000-$50,000. Bids 12/15, awarded 2/14. CD 12/6—ENR 12/8.

North Carolina — State Hy. & P. Wks. Comn., Raleigh, imprv. 8.05 mi. Project 8252, Cleveland Co., to Kiker & Yount, Reidsville, **$45,350.** Est. $50,000-$75,000. Bids 1/31, awarded 2/9. CD 1/20—ENR 1/26.

N. C., Marion—McDowell Co., constructing, reconstructing, imprv. roads, **WPA. $78,457.**

Okla., Guthrie—Resurfacing existing pavements, **WPA. $48,100.**

Okla., Hartshorne—Grading, draining, curb and gutter work, **WPA. $65,240.**

Okla., Hobart — Grading, draining dirt streets, **WPA. $36,660.** R. Lindsay, Old Court House, Oklahoma City, engr.

Okla., Medford—Grant Co., grading, draining farm-to-market roads, **WPA. $49,823.**

Okla., Sapulpa—Creek Co., grading, draining farm-to-market roads, **WPA. $295,000.**

Okla., Woodward—Woodward Co., grading, draining farm-to-market roads, **WPA. $113,289.**

†**Oregon** — Public Roads, Portland, tunnel lining, paving and approach structure 0.257 mi. Oregon Forest Hy. Project 21-J3, K2, Willamette National Forest, Lane Co., to Kuckenberg Constr. Co., 11104 N.E. Holman St., Portland, **$151,214.** Bids 2/8. CD 1/24—ENR 1/26.

Pennsylvania—At office I. L. Hughes, secy. Hys., North Office Bldg., Harrisburg, bituminous on concrete paving 1,009 ft. hy. Wilkes-Barre, Luzerne Co., to C. F. Goeringer Constr. Co., 55 S. Washington St., Wilkes-Barre, **$21,582.** Bids 12/16. CD 12/8.

Pa., Allentown—Grading, surfacing streets, **WPA. $51,816.**

Pa., Altoona—15 mi. or more cement sidewalks, various parts city, **WPA. $35,000** plus.

Pa., Girard—Boro, Boro Hall, grading, surfacing, curbing, etc., streets, **WPA. $29,156.**

Pa., Jeuner Twp.—Township, grading, surfacing, etc., roads, **WPA. $36,530.**

Pa., Mill Hall—Boro, Boro Hall, grading, surfacing various boro-owned thorofares, **WPA. $90,536.**

Pa., Redstone—Boro, grading, surfacing, etc., **WPA. $32,100.**

Pa., Slippery Rock Twp.—Township, grading, draining, surfacing, etc., various roads, **WPA. $419,089.**

Pa., Turtle Creek—Boro, Boro Hall, grading, draining, surfacing, curbing, etc., various parts boro-owned streets, **WPA. $64,612.**

S. C., Greenville — Greenville Co., imprv. 34.1 mi. PWA 1021-F-Unit B and 35.6 mi. PWA 1021-F-Unit D, to Hardaway Contg. Co., 15-11 St., Columbus, Ga., **$84,082** and **$86,814** respectively***35.3 mi. PWA 1021-F-Unit C, to M. J. Carroll, Greenville, **$87,190*****5 mi. PWA 1021-F-Unit A, to E. D. Sloan, Greenville, **$13,728.** Grand total $271,014. Bids 12/6 and 12/15. CD 12/1 and 12/7.

S. C., Newberry—Contr. 1, paving and sidewalks, to Hardaway Contg. Co., 15-11 St., Columbus, Ga., **$51,752. PWA.** Bids 1/31, awarded 2/7. CD 1/23—ENR 1/26.

Texas—State Hy. Comn., R. L. Babbitt, chn., Austin, imprv. 4.625 mi. Montague Co., to M. W. Watson, Natl. Bank, Topeka Bldg., Topeka, **$30,368***9.52 mi. Rusk and Panola Counties, to R. C. Buckner, Jacksonville, **$101,083***13.929 mi. Kimble Co., to Cage Bros. and F. M. Reeves & Sons, Bishop, **$197,934.** Grand total $329,385. Bids 1/24, CD 1/16.

Tex., Albany—H. T. Bauldin, judge, Shackelford Co., grading, drainage structures, caliche base 5¾ mi. Precinct 4, **WPA. $25,192.** F. Buford, Abilene, engr.

Tex., Breckenridge—Stephens Co., c/o Judge, fencing, draining, graveling, grading, cut hills on farm-to-market roads, near Caddo, force account, **$81,942. WPA.**

Tex., Cisco—Grading, widening, drainage, concrete curbing, guttering, paving, **WPA. $169,531.** Bonds voted. F. Buford, 413 Alexander Bldg., Abilene, engr.

Tex., Coleman—Coleman Co., fencing, drainage, clearing, grubbing grading, graveling 48.72 mi. farm-to-market roads, Precinct 4, Purchase and Hire plan. **$84,670. WPA.**

Tex., Coleman—Coleman Co., fencing, drainage, grading, graveling 48.72 mi. farm-to-market roads Precinct 2. Purchase and Hire plan. **$84,770. WPA.**

Tex., Decatur—H. Brown, judge, Wise Co., grading, drainage structures, graveling 11 mi. Precinct 2, **WPA. $82,692.** O. T. Funk, Bridgeport, engr.

Tex., Fort Worth—H. J. Adonis, park supt., graveling, oil, drainage structures, landscaping 13 mi. North Lake Shore Dr., **WPA. $106,186.** R. Bryson, Fort Worth, engr.

Tex., Fort Worth—Dave Miller, judge, Tarrant Co., grading, drainage, graveling 11.7 mi. Precinct 2, **WPA. $47,475.** H. Cooke, Fort Worth, engr.

Tex., Georgetown — Williamson Co., c/o Judge, graveling, grading, draining 42 mi. farm-to-market roads Precinct 3, "Purchase and Hire" plan. **$79,858. WPA.**

Tex., Henderson — Rusk Co., c/o Judge, fencing, grubbing, draining, grading, graveling farm-to-market roads, "Purchase and Hire" plan. **$42,384. WPA.**

Tex., Houston — To Brown & Root, Inc., 4300 Calhoun Rd., imprv. Winkler Dr. **$54,916;** Westheimer Rd. **$11,276*****to Gulf Bitulithic Co., 2820 Polk St., Telephone Rd. **$36,000;** Bway. Blvd. **$66,491*****to Gulf Paving Co., 1401 West Alabama St., Bway. Blvd. **$42,780;** Dowling St. **$30,111;** Scott St. **$30,523;** Brazos St. **$13,534.** Grand total $285,738. Bids 12/22, 29 and 30. CD 12/2 and 23—ENR 12/8.

Tex., Nacogdoches—Nacogdoches Co., fencing, drainage, graveling, grading, 15.3 mi. road in Dist. 2, "Purchase and Hire," **WPA. $69,032.**

Tex., Nacogdoches—Nacogdoches Co., c/o Judge, fencing, drainage, grading, graveling, clearing, grubbing 4 mi. road, "Purchase and Hire" plan. **$27,533. WPA.**

Tex., Olney—Town, asphalt streets throughout town, curbing, guttering, "Purchase and Hire" plan. **$28,025. WPA.**

Tex., Paris—Lamar Co., c/o County Judge, fencing, drainage, grading 2.8 mi. farm-to-market roads, "Purchase and Hire" plan, **$48,416. WPA.**

Tex., Presidio — Presidio Co., c/o County Judge, grading, fencing, drainage, asphalt topping roads, **WPA. $40,904.**

Tex., San Augustine — San Augustine Co., c/o Judge, San Augustine, fencing, grading, draining, graveling 9.2 mi. farm-to-market roads in Precinct 1, "Purchase and Hire" plan. **$35,833. WPA.**

Tex., San Augustine—San Augustine Co., c/o Judge, grading, drainage, fencing, graveling 8.29 mi. farm-to-market roads, "Purchase and Hire" plan. **$25,000. WPA.**

Tex., San Saba—San Saba Co., c/o Judge, grading, fencing, draining, graveling farm-to-market roads in Precinct 1, force account. **$65,747. WPA.**

Tex., Stephens—Stephens Co., fencing, grubbing, grading, drainage, graveling 14.4 mi. farm-to-market roads, Precinct 4, force account. **$52,564. WPA.**

Tex., Stephensville—Erath Co., c/o T. C. Culberson, judge, fencing, drainage, grading, graveling farm-to-market roads thru Tioga, "Purchase and Hire" plan, **$70,295. WPA.**